Gleanings in Bee Culture

CONTENTS

July, 1953

Established 1873 Vol. 81, No. 7

Price of Honey 389
Care and Handling of Honey — Herbert R. Pallesen ..... 393 - 394
The Three Queen Pyramid — Charles W. Gouget ..... 395 - 398
Scale Hive Tells the Story — Sterling W. Edwards ..... 399 - 401
Honey Processing — Huber A. Seabright ..... 402 - 406
Requirements of a Good Smoker Fuel — Wayne Keller 406
The Honey Industry — Robert H. Rusher ..... 407 - 408
Crisp and Cool — Mrs. Benj. Nielsen 409
Hubam Clover in Florida — J. Francis Cooper ..... 410 - 411
Orange Honey from Florida is Proving Popular in Holland 411
AFB: The Continuous Pestilence — Robert M. Mead ..... 412 - 414
Dr. Crane Visits Our Continent — R. B. Willson 415
Editorials ..... 416 - 418
From North, East, West and South ..... 419 - 424
Reinforcing Comb Foundation with Wire — H. H. Root 425
Who Packs Honey in the U. S. A. — Walter Barth 425
Live and Learn — Propolis Pete 426
Second Glances 427
A Talk to Beginners — M. J. Deyell ..... 428 - 430
Asked and Answered 431
Appointment of State Supervisor of Apiary Inspection in California — H. M. Armitage 432
Why the Cell-door is Hinged — Wayne Keller 432
Observations on Balled Queens — V. G. Milum 433
Just News ..... 434 - 435
Average Monthly Weather Resume and Outlook — U. S. Dept. of Commerce 436
New Zealand Beekeeper on Top of World 437
Requeening a Laying Worker Colony — E. F. Moore 437
American Honey Institute News Notes — Mrs. Harriett M. Grace 438

Subscription Rates: United States, Canada, Pan American countries, and Spain, one year, $2.00; two years for $3.50; three years for $5.00. Single copy, 20c. Other countries, 50c per year additional for postage. Discontinuance: Subscription stopped on expiration. No subscriber will be run into debt by us for this journal. Change of Address: Give your old address as well as the new and write the name to which the journal has heretofore been addressed. Remittance should be sent by post office money order, bank draft, express money order, or check. Contributions to Gleanings columns solicited; stamps should be enclosed to insure return of manuscript to author if not printed. Advertising Rates: Advertising rates and conditions will be sent on request. Results from advertising in this journal are remarkably satisfactory. Advertisers' Reliability: While the publishers do not guarantee advertisements in this journal, they use utmost diligence to establish in advance the reliability of every advertiser using space in this journal.

Entered as second class matter at Post Office at Medina, Ohio. Published monthly. Opinions expressed by the writers in these columns are not necessarily the opinions of the editors.

The A. I. Root Company, Publishers, Medina, Ohio

M. J. Deyell, Editor; M. W. Hobart and Walter Barth, Assistant Editors
H. H. Root, Associate Editor

BEES AND QUEENS

Everything for the Beekeeper.

Telephone: Hartford 5-5546

RAISE COMB HONEY

in the

LOTZ SECTION

No finer Section Made

also

A Complete line of Bee Supplies

Woodenware
Foundation
Containers
Accessories

Write for Prices

August Lotz Co.

Manufacturers & Jobbers

Boyd, Wisconsin

The Perfect Combination

Root QUALITY

BEE SUPPLIES
and
SERVICE
from
SYRACUSE

Before placing your order, be sure you have our latest catalog and price lists. Your request on a postal card will bring them to you.

Root Bee Supplies to help you produce the most honey.

Honey Containers to market your honey attractively.

Modern equipment for rendering your beeswax at reasonable prices.

We pay the highest market prices for rendered beeswax — cash or trade. We will send shipping tags — just ask for them.

A. I. Root Co. of Syracuse

1112-14 Erie Blvd., East
Syracuse 3, N. Y.

INDIANA BEEKEEPERS

We are now getting orders for our fine bees and queens. Why not order some today? Prompt shipment on Root Quality Bee Supplies. Wired Foundation. Free Parking.

A. I. Root Co. of Indianapolis
121 N. Alabama St., Li. 2732
Indianapolis 4, Indiana

HONEY WANTED
Bryant & Sawyer
2425 Hunter St., Los Angeles 21

Canada's
National Monthly Magazine
for Beekeepers

Canadian Bee Journal

Streetsville, Ontario, Canada

U. S. Subscription Price,
only $1.75 per year.

The Hubbard Apiaries

WANTED: Honey and Beeswax

Write for Free Catalog

Quality Bee Supplies — **Factory Prices**
Prompt Shipment from Stock — **Satisfaction Guaranteed**

THE HUBBARD APIARIES

Manufacturers of Bee Supplies and Comb Foundation
Onsted, Michigan

H. H. JEPSON CO. — 46 Lincoln St., Boston, Mass.
Supplying N. E. Beekeepers with A. I. Root products for 50 years.
Boston Stock — Root Prices

Apiculture Supplies

Sensible Prices Since 1886

Write for 1953 Catalogue

WILLIAMS BROS. MFG. CO.
5205 S. E. 82nd Avenue
Portland 66, Oregon

Western Beeswax Headquarters

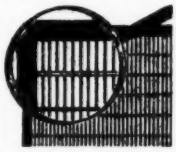
Certified Beeswax Salvage Plant
Custom Rendering
Bleaching and Refining
Foundation Manufacturing
both plain and wired

Top Cash Market for Your Beeswax

Woodrow Miller & Co.

Colton, Calif. **Phone 1722**

Chrysler's Electric Welded All-Steel Queen Excluder



The only worthwhile Queen Excluder on the market

- Allows maximum bee passage
- Better ventilation
- More honey production
- No wood. No Burr combs
- No sharp edges to injure bees
- So durably made that it is permanently queen excluding and will last a lifetime.

We manufacture a full line of Bee Supplies. Order from our dealers or direct from our factory. Canadian-made goods are cheaper. No duty. Send for our price list.

W. A. Chrysler & Son
Chatham - Ontario - Canada

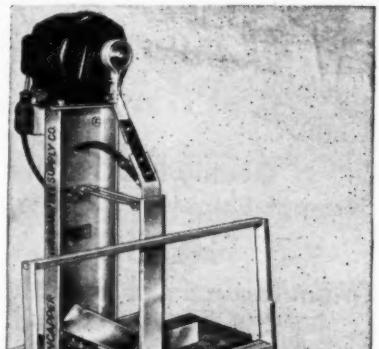
The New Zealand Beekeeper
The Quarterly Magazine of the National Beekeepers' Association of New Zealand. Better Beekeeping—Better Marketing. Subscription, 8 shillings per year, payable to
THE GENERAL SECRETARY
Box 19 Foxton, New Zealand

DO YOU KNOW

AG's New Vertical, Vibrating, Steam Heated Uncapper, speeds the work 10 to 25% faster than other methods?

Combs of honey picked out of supers are swung over onto the Vibrating Knife, eliminating all unnecessary handling. The second side is uncapped by merely rolling the comb over, resting top or bottom bar on the frame rest. Send for special circular.

A. G. WOODMAN CO.
Grand Rapids 4, Michigan U.S.A.



STOLLER'S

Frame Spacers

The finest thing ever offered beekeepers. See your dealer, or write

STOLLER HONEY FARMS
Latty, Ohio

PINKING SHEARS

Only $1.95 postpaid. Chromium plated, precision made. Manufacturer's Christmas overstock. Guaranteed $7.95 value or money refunded. Order by mail. Lincoln Surplus Sales, 539 Main St., Evanston 36, Illinois.

We work your beeswax and purchase all grades of honey.

We pay you the best prices for quality honey and beeswax.

Send for our new 1953 Catalog

The Fred W. Muth Co.
229 Walnut St., Cincinnati 2, O.

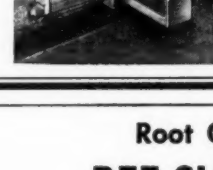
Root Quality

BEE SUPPLIES

Serving Chicago Area
Mail Orders Filled
Automatic telephone orders by day
DIckens 2-8855
Evening sales by appointment

Roy Westley
3222 W. Beach Ave.
Chicago 51, Illinois

Bee Lines to The Editor



"I was very much intrigued by the item by Robert H. Rusher in the March Gleanings. I'll bet my marbles, though, that he has Propolis Pete 'bracketed' within 20 states by that yellow pollen in November, but no closer.

"Late last fall, my wife and I took a walk deep into the woods and as we crossed a little clearing I heard the buzz of bees. On look-

(Continued on page 445)

Monthly Honey Report

June 20, 1953

The following figures represent an expression of current prices from beekeepers and honey packers over the country. They are based on several reports from each state averaged with the reports in the region. Where insufficient information is returned, prices have been omitted from the chart. Where three figures appear on the chart the first figure represents the low, the middle figure represents the average, and the third figure the high price in cents per pound. Where only two figures are used the low and high are shown.

	North & South Atlantic	South Central	North Central	Mid-West	West
Bulk Honey:					
Table Grade			11 12¼c	10½-12-12½c	
Industrial Grade			9 10c	9-10-10½c	
Price to Grocers:					
5 lb. jar - can	18-21-26	17-22-25	17 23	15-17-18	16-18-22
3 lb. jar - 12's		20 25			
2 lb. jar - 12's	19 28	20 25	22 25	22-24-25	24 25
1 lb. jar - 24's	24-27-30	23 27	25 27	21-24-25	24 27
Comb Honey:					
Cs. of 24 Sec.	$7.40-8.70-10.00				
Retail Price:					
60 lb. can	14-17-20		15-18-22	15 25	15-17-20
5 lb. jar	22-28-35	22-26-30	22-24-25	18-20-23	20-23-25
3 lb. jar	31-35-40	27 32			
2 lb. jar	27 37	30-33-37	28 32	24-27-30	30 32
1 lb. jar	30-36-45	30-36-50	32-34-35	27-31-34	25 37
Honey Sales:	Fair	Fair	Fair	Slow	Fair
Estimated Crop:					
Condition based on normal %	100	74	85	91	

A few comments were as follows:

"Prospects good for a fine crop."—Pennsylvania.

"Honey sales are slow here when fresh fruit comes on—strawberries now."—New Jersey.

"Bees have done well on scarlet clover and vetch. Quite dry now, but season good so far. Lima beans coming on and generally a good crop."—Delaware.

"In my locality, rain interferred with crimson clover."—Tennessee.

"Bees are storing honey. Prospects look good."—Kansas.

"White clover just starting to bloom."—Minnesota.

"A fine, much better and earlier honey flow on than same date a year ago. Adding all bodies that I have at once. Several plan to lower their prices a cent or two."—Neb.

"Prices down about 1c per pound.'—Iowa.

"The March 1st crop prospect was easily 125%. Cool weather and later hot continued winds reduced mesquite crop to only about 25% of normal, which is now gathered. What makes a beekeeper anyhow."—Arizona.

"A dry winter coupled with two late frosts practically wiped out sage and orange."—Cal.

"Much starving and brood reduction because of continuous rains. Considerable spraying with weed chemicals kills lots of legumes in grain fields."—Oregon.

Peace is for the strong . . .
Buy U. S. Defense Bonds regularly!

PROFITABLE NUTRITIOUS SANITARY

Comb Honey Produced in Our Sections

THE DEMAND IS GOOD NEVER A SURPLUS

We manufacture all the items needed to produce comb honey profitably.

Marshfield Manufacturing Company (Inc.)

Marshfield Wisconsin

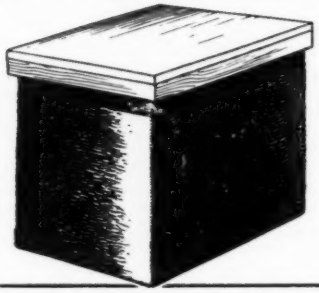
See our catalog for prices on large quantities.

Winter-Protect Your Bees With Bemis **Winter-Warm** Hive Covers!

Bemis WINTER-WARM HIVE COVERS fit snugly over hives and guard against killing wind and cold. Double-weight, weatherproof, waterproof, durable. Put on or remove in seconds . . . no nailing or tacking.

Economical . . . cost per hive about same as retail price of pound of honey. Three sizes: One Hive, Two Hives, Modified Dadant.

If your dealer doesn't have Bemis WINTER-WARM HIVE COVERS, write to



On Sunny Days . . . Users report that, while Bemis WINTER-WARM HIVE COVERS keep out cold winds, they admit and retain warmth on sunny Winter days so that the bees will take the exercise that keeps them in good health and activity.

BEMIS BRO. BAG CO.
111 N. Fourth St., Box 48, St. Louis 2, Mo.

Mail Order Prices

We have available the following bee supplies which our inspectors have not passed as first line quality — these are the same as our pre-war mail order brand — slight defects in the material make these great savings possible for you.

These are Offered as "Mail Order Grade"

C 2	Full Depth Supers, 10-frame, empty, 5's, 45 lbs.	$ 8.30 per carton
C13	Shallow Supers, empty, 5's, 28 lbs.	5.20 per carton
D 2	Beeway Supers, empty, 5's, 22 lbs.	4.25 per carton
B 2	Metal Covers with Inner Covers, 5's, 51 lbs.	11.10 per carton
G 6	Standard Frames in 100's only, long top, 45 lbs.	9.95 per carton
G16	Standard Frames in 100's only, 2-piece bottom, 45 lbs.	9.95 per carton
G22	Shallow Frames in 100's only, long thin top, 25 lbs.	7.25 per carton
G26	Shallow Frames in 100's only, long thick tops, 38 lbs.	8.95 per carton
H3B	50 Sheets Imperfect "Wire-Ply", 8 x 16¾", 9 lbs.	6.95 per carton

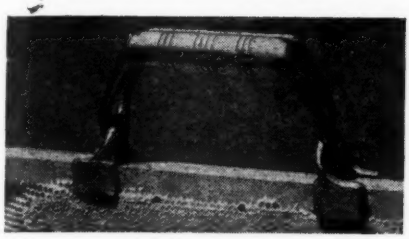
Available From Medina Only

Net Cash with ORDER — No Discounts

We reserve the right to return your cash if our stock is exhausted when your order is received.

The A. I. Root Company, Medina, Ohio

FRAME GRIP SEND NOW!



This light modern tool is for easy handling and removal of frames from the bee hive. Orders promptly filled—Satisfaction guaranteed!

$3.00 plus 30c postage fee

McCord Manufacturing Co.
Rt. 2 Box 866
San Jose, Calif.

OLDEST BEE JOURNAL IN THE ENGLISH LANGUAGE

Keep up on markets, practices, scientific data, regulations, and plant possibilities.

1 year, $2.00, U. S. and Canada
Foreign postage, 50c a year extra

AMERICAN BEE JOURNAL
Hamilton, Illinois

Michigan Beekeepers:

Visit our modern
Honey Packing Plant
Ask for Al Tennenhouse

We carry a complete Line of

ROOT QUALITY
Bee Supplies

5-pound jars (Frosted Shoulders)

60-pound cans—Large Handles
3½-inch openings

Prompt Mail Order Service

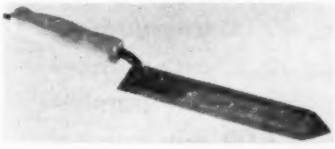
Free Parking for Cash & Carry Customers

Prairie View Honey Co.
12303 - 12th St., Detroit 6, Mich.
Cash Paid for Honey & Beeswax

AW SHUCKS!

Why fuss around with paper or leaves. Just touch a match to a "JiffyLite" and your smoker is lit. Send a dollar for 50 on trial. Your money back if you don't need them.

E. D. Wirth Pine Neck Road Southold, N. Y.



The MASTER
(formerly Macy)

Electric Uncapping Knife with thermostat and exposed adjusting screw. Rubber cord. Crucible steel blade.

Price $14.25

HUTCHISON MFG. CO., 2008 S. Sepulveda Blvd., Los Angeles 25, Calif.

If you are taking time to read, why not read the best? Condensed to save you time. Illustrated to give you pleasure.

Modern Beekeeping
The Picture Bee Magazine
Box 210 Clarkson, Kentucky

"The Australian Bee Journal"
Published by the Victorian Apiarists' Association at the beginning of each month.
Subscription 10/-per annum plus 2/6 postage to oversea countries.
Address 112 Whitehorse Rd.
Ringwood, Victoria, Australia

Peace is for the strong . . .
Buy U. S. Defense Bonds regularly!

STOVER'S QUEENS

ITALIANS – CAUCASIANS – HYBRIDS

Send your orders to us if you want Quality, Prompt Shipment, and Fair Prices. What more can you ask?

Prices After May 20th

	Queens	2-lb. & queen	3-lb. & queen	4-lb. & queen	5-lb. & queen
1 - 24	$ .75	$3.00	$3.75	$4.50	$5.25
25 - 99	.70	2.85	3.55	4.25	4.90
100- up	.65	2.75	3.40	4.00	4.60

Tested Queens — $1.50 each

Queens Postpaid—Airmailed and/or Clipped—No Extra Cost

Queenless Package —Deduct Price of Queen

Packages F.O.B. Shipping Point

The Stover Apiaries Mayhew, Miss.

Summer Prices
on
Package Bees and Queens

2-lb. pkgs. with queens, wt. 7 lbs., $2.00 any number
3-lb. pkgs. with queens, wt. 9 lbs., 2.50 any number
Untested queens, ...50 any number
Tested queens, ... 1.00 any number

We list weight of packages so you can check mail charges. Three packages to crate in U. S. A. Express best for Canada. Queens clipped on request and Airmailed.

Our 41st year — that is why we know **Quality** counts.

Merrill Bee Company

Box 115 State Line Mississippi

Gleanings in Bee Culture

Created to help beekeepers succeed

Care and Handling of Honey

By Herbert R. Pallesen
Research Assistant, Department of Entomology, Cornell University, Ithaca, N. Y.

Premature crystallization and the necessity of reconditioning the product is one of the chief problems of the packer. The object is to overcome this problem and at the same time retain all the virtues of honey in preparing it for market.

Before outlining some of the experiments which were conducted in an effort to retard crystallization, it is desirable to briefly review some of the factors known to stimulate crystal formation. Since the factors causing crystallization are known, it is logical that in order to prevent crystallization, a procedure in direct opposition should give the desired results.

Honey is composed of two sugars known as dextrose and levulose. Dextrose forms crystals, while levulose remains in liquid form around the dextrose crystals. Practically all honeys are saturated with respect to dextrose at temperatures below 86 degrees F. In other words, most honeys contain more dextrose than can actually be held in solution at or below normal room temperatures. This means that crystallization is possible and will normally take place unless prevented.

Honeys high in dextrose will usually granulate within a few days, while those high in levulose may remain liquid for months, or years. Premature crystallization is therefore experienced largely in honeys having a high percentage of dextrose.

Crystals in honey form about nuclei. These nuclei are usually fragments of dextrose hydrate crystals, but may also be organic particles, or minute air bubbles. The presence of such nuclei stimulate crystal formation roughly in proportion to their amount and number.

Factors stimulating crystal formation are inter-related. Nevertheless it is logical to assume that if these factors are controlled, early or premature crystallization should not be difficult to control.

In one experiment eight 60 gallon quantities of honey, varying in color, specific gravity, pollen grains, air bubbles and other inclusions, were secured for experimental purposes. The honey was treated in various ways, and samples were drawn and placed in a room with a controlled temperature of about 57 degrees F., which has been found the most favorable temperature for crystallization.

Thorough straining appeared to be the greatest single factor in preventing crystallization. Honeys strained through cheesecloth granulated more quickly than those strained through canton flannel; and honeys strained through one thickness of canton flannel granulated more quickly than those

strained through two layers of canton flannel. However, it was found impossible to strain honey even through one layer of canton flannel unless the honey was heated to above 140 degrees F.

Several honeys were heated to different temperatures for varying lengths of time. It was found that the more the honeys were heated the longer they remained liquid. Prolonged heating should of course be avoided, as it darkens the honey, reduces the flavor, and destroys the enzymes.

The honeys which contained an excess of air bubbles granulated more quickly. Samples which were placed under 26 inches of vacuum to remove the air remained liquid for a greater length of time. No loss of flavor could be detected when the honey was placed under the vacuum for five minutes, but further subjection to vacuum removed the flavor in direct relation to the length of time the vacuum was drawn. Vacuum equipment is costly and unquestionably reduces the flavor of the honey.

Very good results were obtained by straining warm honey through wire cloth which has from 80 to 100 mesh to the inch. Better results may be obtained by straining honey through a series of wire-mesh cloths varying from 12 to 100 mesh to the inch.

Air bubbles are foreign to honey and are usually incorporated through carelessness in the removal and preparation of the crop for market. If proper care is taken in this regard, it would not be necessary to use a vacuum. If the honey is kept in a warm room from the time it is taken off the hives until it is packed for market, most of the air bubbles which are accidentally incorporated will have an opportunity to rise to the surface.

Once air bubbles are incorporated into honey, they are very difficult to remove. Each time the honey is pumped or strained, bubbles are broken up into smaller ones, which owing to their small size are still more difficult to remove. Honeys intended for the liquid trade should be kept free of air bubbles by keeping the honey warm during extraction and the proper use of a pump.

Honey drawn from cappings, and especially from the capping melter, usually contains a large number of pollen grains and other inclusions which stimulate crystallization. Such honey should be sold separately and not mixed with honey intended for the liquid trade.

When preparing liquid honey it should be gently heated to about 150 degrees F. to dissolve the dextrose crystals as well as to facilitate thorough straining. As the honey is raised in temperature it should be gently stirred to avoid overheating any one portion of the honey. Prolonged heating should be avoided, as it darkens the honey and lowers the flavor.

Immediately the desired temperature is reached and all the crystals are dissolved, the honey should be thoroughly strained by gravity or pressure through some material that will remove practically all the particles which will act as nuclei for crystal formation.

The honey should then be run into the desired containers and sealed while hot. As the honey cools, a partial vacuum is usually created in the container above the honey. This assists in drawing air bubbles to the surface of the honey. Since honey rapidly forms crystals at low temperatures, liquid honeys should be stored in a warm room.

"WE'VE COME TO SEE THE APES."

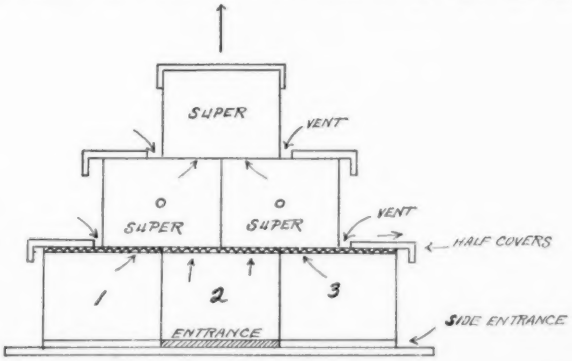
The three-queen pyramid showing the actual super arrangement.

The Three Queen Pyramid

By Charles W. Gouget, Glen Ellyn, Ills.

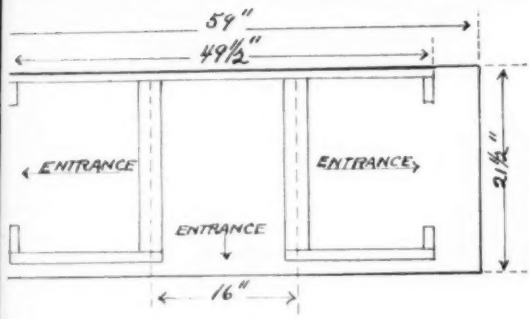
The myth that only one queen can exist in a hive has long been exploded. We have found that two queens can exist in the same hive as well as one, if properly managed, and that together they will often produce a larger crop than two separate hives.

The question naturally arises, therefore, that if two queens can be manipulated successfully in the same hive why would it not be possible to handle three or four, or, in fact, any practical number. Obviously, we are limited in the height to which we can pile supers, and that height is much lower than the Empire State Building. Although most two-queen systems build the hive on a vertical axis only, there seems to be no good reason why the same idea cannot be worked out, at least partly, on a horizontal plane using vertical supers for surplus only. The idea could be called pyramiding. In this three-queen system there are three brood chambers side by side on a horizontal platform, each chamber containing a young, vig-



The three-queen pyramid arrangement provides an elastic expansion plan which almost automatically relieves overcrowding; at the same time providing ample ventilation at many points to help lessen the tendency to swarm.

The actual modified baseboard showing the arrangement of the one-inch strips to provide three separate entrances.



Construction of the Modified Baseboard. — Working drawing showing the arrangement of the entrances in the three-queen hive. The wooden strips used are one-inch square except for the two in the center which are one by two inches.

orous queen. Queen separators are placed over each brood chamber and two additional supers placed on top in the center of the first three. A fifth super is placed in the center of the second two forming a pyramid-like structure that can be continued to almost any convenient height. (See diagram.) It will be noted that the first horizontal tier allows a space at the end of each brood chamber equal to one half of a hive cover. These openings are closed by sawing a regular hive cover in two. The half covers can be adjusted back and forth to increase or decrease ventilation during hot weather. It will be noted from the diagram that almost any practical number of queens could be used since worker bees are funneled to the point of the pyramid to store the surplus honey.

How to Start a Three-queen Hive

All equipment should be prepared in advance, such as the modified bottom board and the two divided covers to be used on the open ends of the pyramid. One should also make sure that there is enough additional standard equipment to do the job, especially queen separators, Boardman feeders, and hive covers. Three queen separators and three feeders are absolutely essential. Obviously, one must also have two additional vigorous, young queens to be used at the time of the division.

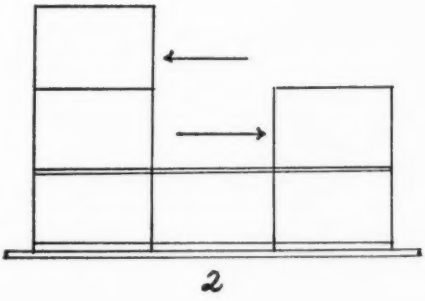
A very strong hive containing two or three chambers should be selected for the division early in the spring before the dandelion bloom. A strong three-chambered hive is usually better than a similar two-chambered hive because less manipulation is necessary to make the divisions. The modified baseboard should be erected before the division immediately behind the hive selected so that its center is in line with the hive to be used. It should be well supported throughout its length so that the platform is solid and level, and so that it may not sink or bend more at one point than at another since the weight will be tremendous during a good honey flow. After the modified baseboard has been erected

solidly in position the hive can be divided by placing each super chamber in its proper position. The original queen's chamber should be placed on the end section as illustrated in the diagram and at least two frames of completely capped brood placed in the remaining two new chambers, plus a comb or two of honey. The bee population should be more or less divided into three parts by shuffling whole frames of bees. The three separate super divisions should be allowed to stand overnight with tops and feeders and the new queens introduced the following day. Any method of introducing the queens may be used, but it is important to keep each section separate and to keep feeding continuously until each section becomes established, and until a good honey flow comes in.

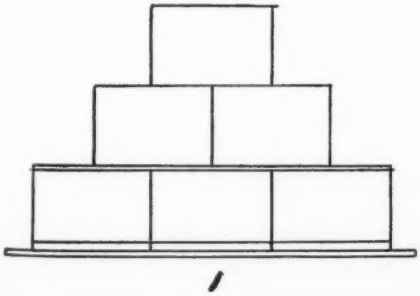
At this point the three sections may be combined as shown in the diagram.

When all supers are removed from the brood chambers, plyboard covers should be used to prevent one group of bees from "flowing" into the other.

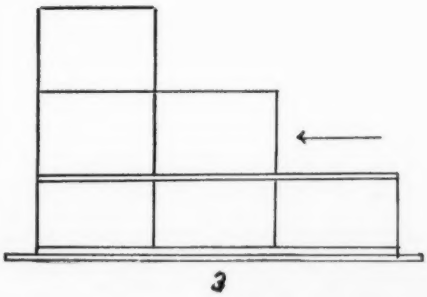
Figures 1, 2, 3 show the method of manipulating super to examine brood chambers. The supers can be parted in the middle to examine the middle chamber and then shifted from side to side to examine the rest. Such manipulation will save a lot of back-breaking labor.



2



1



3

Until combination takes place there will be a tendency for bees to drift back to the parent stand, but this tendency can be neutralized by rotating the brood chambers when necessary. Eventually, if everything goes well all three brood chambers will be packed to overflowing with bees which will "funnel" their way to the "surplus" supers at the top. If the flow is unusually heavy two "surplus" supers can be continued upward side by side, if not, a third single super can start a third tier. Two or three weeks before the end of the fall honey flow the three brood chambers are again combined for the following season by saving the best of the two young queens and by killing the remaining two. In case both young queens are good the extra one can be used to replace an old queen in another hive.

Advantages of the Three-queen Pyramid

There are many practical advantages of the three-queen pyramid type of arrangement which are labor saving and which help to control swarming:

1. With the exception of the half covers and the modified baseboard all standard equipment can be used intact.

2. Much heavy lifting can be avoided in examining brood chambers by sliding supers from side to side rather than lifting them to the ground. The middle brood chamber can be examined merely by parting the second tier as shown in the diagram. The outside chambers can be examined likewise by shifting toward the center. In case it is desired to remove all supers above the brood chambers at the same time one should have at least two flat, plywood covers to prevent the bees from one chamber from "pouring" into the other and possibly carrying its queen with it. There is little need for examinations, however, after the third tier of supers is once started in earnest.

3. There is little danger of swarming due to overcrowding and lack of ventilation because there is always plenty of room, and the hive can be well ventilated at many points by pulling back the half covers as far as necessary. Workers, too, may enter and leave the hive through the ventilating openings saving much time and energy in collecting and depositing nectar.

4. During a good honey flow the total crop from a three-queen pyramid is usually more than three average hives.

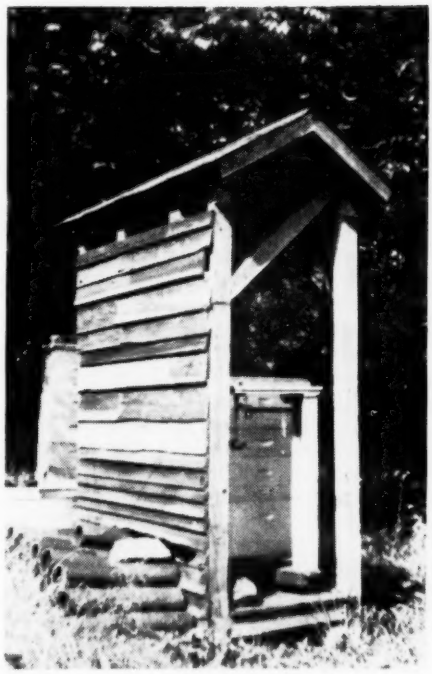
A view of the apiary belonging to Dr. Waldemar de Almeida, at Vargem Alegre, Brazil. In this yard a good crop of coral vine honey is secured every season.

Scale Hive Tells the Story

By Sterling W. Edwards, Myersville, Md.

One of the many interesting features of the backlot apiary is the scale hive. Not only is it valuable for the daily record of weight gains and losses but the notations of weather, temperature, and blossoming that make up the full story of the honey seasons will furnish an incontestably accurate picture of annual bee pasture conditions, and will thus be significant in pointing out just what may be expected, nectarwise, in any given location.

The scale hive illustrated here was placed under the 4′ x 6′ x 8′ high shelter several years ago. Prior to this, most of the local opinion on bee pasture in these mountains was just so much guessing. Take the sumac flow here. Local beekeepers opine that it lasts about a week. We can make a lot of honey from this flower, which comes on slowly according to altitude and exposure to sun. South of us 30 miles, sumac comes in two weeks earlier, lasts two weeks, but from the past scale hive records, I know that sumac will appear in our neighborhood about July 1 and the bushes in the hedgerows in the upper fields will bloom one week before the sumac flowers open along the creek banks on the flat land under the willows. The records over the years show that with weather conditions normal, we can count on a sumac flow of from 2½ to 3 weeks. Most of this I learned from my scale hive; not from word of mouth around.



All beekeepers like to know when and how much honey is coming in. The scale hive is the answer.

A Shelter Over Scale Hive is Useful

Four posts 4″ x 4″ x 8′ high, fixed to a 4′ x 6′ base, the whole to be covered with a suitable roof, will serve as a good shelter. Board up the back for wind and rain protection which will keep the scales and the record book dry. Both book and pencil can be tied to a nail so they will not blow away. The platform scale under the hive shown was bought at a country sale for $4.00, and is so fixed it will not roll. Mud daubers and wasps build nests in the levers which then must be cleaned of all foreign matter. The scale should be well painted.

Some beekeepers set the scale on a concrete platform without any cover. Some adapt penny scales to hive use with a throw-off lever which keeps weight off platform except when actually recording, and several interesting systems have been shown in back issues of this magazine. Other ways to set up and house scale hives will occur to those who become interested in this phase of bee culture.

Now a scale hive can teach the beekeeper many things. Over several years by close observation, it will be possible to ascertain the duration of about any flow, the probable yield from it and the color of all the nectars stored. Such data is very valuable in a bee pasture study, and is especially useful when checked against a neighboring beekeeeper's scale hive findings. Thus good scale hive records will very

nearly eliminate the guesswork in many phases of honey production. However, if you want the scale hive to indicate what your whole apiary is doing, you must treat this colony the same as the other hives.

More than four full stories on the scale platform become awkward to handle in the rather confined space. You can remove capped supers to other hives and thus make examination easier under the shelter.

Records Must be Faithfully Kept

I want to emphasize that one needs to keep — and study — the scale hive entries over a period of years before the greatest values of the records become apparent. In my book the entries are made in vertical columns under the following heads, and in the order given: 1. Date; 2. Time of day; 3. Weight; 4. Weather; 5. Nectar sources. There might be other data of importance in your area which needs recording. Date, time, and weight are simple entries, but time of day is important, as early morning and late evening readings differ, since the bees evaporate from 1½ to 3 pounds of water during the night on a previous day's build-up of 10 to 16 pounds of nectar, in our section. A strong hive will store 15 to 19 pounds right along on good days in a fine flow in these mountains. Which of the flows yield the most honey; which can be worked on cloudy days; which are quickly washed out by rain? Such questions are gradually answered from scale-hive study. Likewise, such factors or questions in nectar production as the effect of dry weather on blossoming, why clovers did not yield, and the duration and yield of special farm crops, which may prove of value to beekeepers, may also be answered by diligently kept scale-hive records. It goes without saying, of course, that confirmation of the scale-hive picture often requires colony examination and parallels floral observation in the field.

As the weeks roll on you can determine the strength of each flow, and the conditions that promote the maximum flows. Then, too, the scale hive indicates what surplus is available for winter stores, and what is coming in from fall flows, if you are one of those who look to fall nectar to fill the food chamber. The records thus might save you much valuable time right at a point in the honey season when you have none to spare. Suppose you decide on Thursday in a strong locust flow to put extra supers on all hives next day. But on Thursday night the reading shows a gain of only 6 pounds whereas it has been recording above 12 pounds per day. You decide to wait another day. Friday night you record a gain of but 2½ pounds, indicating yield is tapering off. You decide not to super at present, particularly as it would mean night work with foundation. 'Tis true it wouldn't hurt to super at this point, as the bees would use the space for clover or some other later flow, yet when time presses, only the most essential jobs can get done. Supering a few hives would be but a small labor, of course, but supering two or more apiaries of 50 or more colonies each is quite another matter. In this case the scale hive reading indicated that a considerable amount of labor and time could be saved at the moment.

What We Learned of the 1952 Season

Here is the condensed picture for the year:

(March to April)

(Jan. 11, 115 lbs. Feb. 27, 110 lbs. Mar. 22, 124 lbs. Put in two frames of honey. Mar. 27, 118. Loss probably due to much pollen carrying; little honey. Apr. 7, weight 121; rain, cold, and winter returns; gave super of honey from another hive; weight now, 152.)

It is necessary that the scale hive build up quickly, that it have all the attention it needs, without special favors, and that if at any time there is likely to be a loss of activity from queen trouble, another hive should be substituted. If this operation is planned a week in advance, the new hive can be moved up country three miles or more, and one week later be brought back and placed on the scales. The old scale hive can be set aside, as whatever loss occurs will go to the new one, or it can be screened at night, moved to a considerable distance, if convenient, and kept shaded and closed for a day, with screen frame

top in place of honey board (inner cover) and the cover blocked up an inch. When this is done, bees are usually mean and ventilation must be carefully watched. When the bees are released next day, have some branches across the entrance. One simple way to treat the old scale colony might be to divide it into two nuclei if the season is suitable, giving each two frames with newly laid eggs if needed and wait a time in patience for new queens to hatch. Old timers will understand the entire problem here while beginners may properly follow the above procedure or introduce a new queen.

May through June

(April 7 to May 1. Period of cold rain; on the one warm day a gain of two pounds; otherwise a general loss of 6 pounds, in spite of flowers in abundance. May 1-4, dandelion gave yield of 10 pounds, followed by decrease in weight to May 21, due to cool, wet weather in which the bees did little but eat honey and chew holes in wax. On the 22nd the real flow began and on June 1, weight was 203 plus 3 frames removed for a swarm. May 24, tulip poplar came in, and lasted until June 12, on which day took off 69 pounds of honey. Weight now 201, which built up to 217 by July 24, showing bees simply fed themselves through the long, hot dry spell, with all nectars about dried up.)

July to December

(On July 25, took off 58 pounds of honey leaving a weight of 159 and from this date on there were spotty gains, but a general overall loss to 135 pounds up to packing day on December first. By examination, this hive now has on top a shallow super of about 30 pounds; under it a deep food chamber of 60 to 70 pounds; and under it the brood chamber, mostly air and wood. The cluster is now mainly in the food chamber.)

From the more detailed record one would quickly note that our entire crop of honey was made in the very short period of 18 days from tulip poplar, seasoned with slight yields from berries, mints, herbs and the general list of our nectar yielding plants. We know which plants failed to yield because of cold, rain, excessive heat or dryness. And from previous records we know what those yields are in good seasons. We learned this year that if berries, locust, dandelion, and fruits do not yield, for any reason, but tuliptree does, we can still make a good crop from the latter; and f.om previous records we know that if tuliptree fails but is followed by good clover weather, we can also get a good crop of light honey rather than dark. Thus the guess work is somewhat eliminated; the scale hive seems to tell the story.

Other interesting conclusions were also drawn from the 1952 weights and notes; (1) As our first real failure for years occurred with sumac, we felt it true that the hot and dusty spell dried up the nectar. (2) All fall plants matured faster, some by two weeks, as a result of the August dry spell and the last-of-August cold night spell. (3) A strong aster odor may emanate from the hives when actually but the merest minimum of honey is being made. (4) Lack of rain for a three week period during clover time can mean no clover honey. (5) A 19-pound day is about the most we can have in our mountains.

Bees Take a Vacation Last of August

From previous years we found out: (1) That if locust and berries come on together, the bees will work the berries as a more open blossom. (2) If tuliptree and berries come on together, the tuliptree is favored. (3) A day's rain on locust at height of bloom ruins the yield. (4) If a slow decrease in weight is noted during major or even minor flows, be sure to promptly inspect brood nest and queen. (5) Always there is a loss of weight during the last weeks in August — one, two, maybe three pounds daily. (6) Bees can store really heavy yields of golden rod and aster in a normal fall season. (However, 1 and 2 do not apply to all hives in the apiary.)

Should I increase my apiary and produce more honey? Are my honey flows of sufficient duration to provide heavy crops for large apiaries? These and many other questions can be partly or wholly answered by studying the scale hive record. Get a set of scales and try the system for yourself!

Honey Processing

Part I. Controlling Moisture Content in Honey

By Huber A. Seabright, Columbus, Ohio

[Mr. Seabright is a graduate of Ohio State University, Columbus, Ohio, in Electrical Engineering. He has worked with bees since his boyhood as his father was a beekeeper.—Ed.]

The honey industry has made remarkable strides in the past along such fundamental lines as handling bees, nectar secretion, honey production and processing, food value of honey, and marketing. A great deal of study and research has been done in learning how to succeed and the whys and wherefores when things go wrong.

Striving for better results is most commendable in all lines of endeavor. If we had all the answers to the various operations of our industry many of us would lose interest at once. These matters confront us from the time the nectar is secreted and the bee fills her honey sac until the honey is consumed.

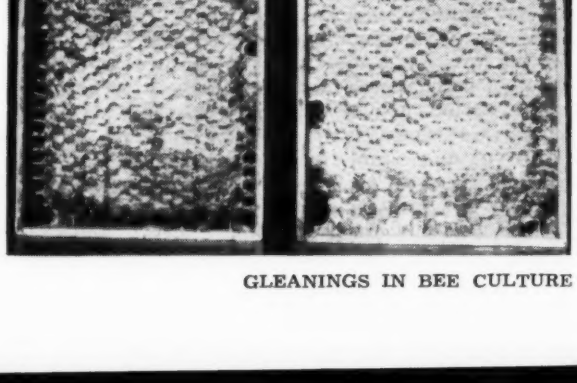
The first step in the processing operation begins when the bee draws in the nectar from the flowers and with little or no change conveys it to the hive. Then moisture is removed by the bees in the hive before depositing the nectar in the cells of the comb.

This nectar still contains considerable moisture and further evaporation takes place from the open cells before they are sealed depending largely on atmospheric humidity or moisture in the air. During hot dry weather the moisture in the honey is carried off readily while damp cool weather has the opposite effect. Honey acts like a sponge in that it absorbs moisture up to a certain point in damp cool weather and gives off moisture to a certain point in hot dry weather. This action takes place regardless of location of the honey whether it be in the hive, outside, or in a building, capped or uncapped. When we consider the atmospheric conditions within the hive with air circulation none too good, moist air entering especially on cloudy days and at night and with several thousand bees exhaling water vapor all the time it is apparent that the moisture content of the honey may often be above the safe limit.

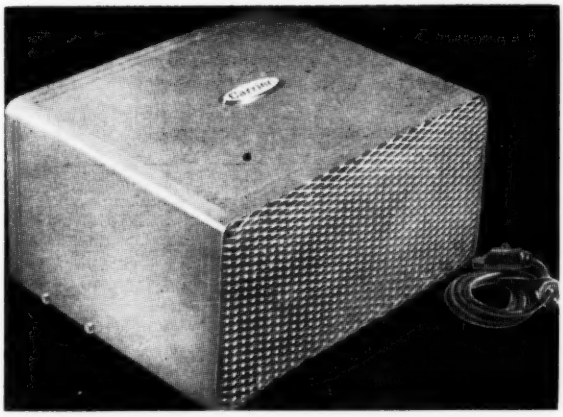
Since the moisture content of honey is a vital factor as regards its keeping qualities, a knowledge of atmospheric conditions is of prime importance during the processing operations.

Due to the wide variations of atmospheric relative humidity from day to day and season to season, any set of rules for processing honey must be based on known factors and conditions at the time, in order to be effective in controlling the moisture content and prevention of fermentation. This is not a hurry-up procedure but should be kept in mind from the start of the honey flow and not neglected until the last pound of honey is sealed in the container.

As the honey flow begins to taper off and the harvesting season approaches, a record of the daily average humidities will give a fairly good indication of the moisture content of the honey. If this record shows more days



The section on the left is a wet season honey, badly fermented and not fit for sale or use. The other section is one year older and in perfect condition.



Carrier 53F Humidry Unit—This unit is driven by a ⅓ h.p. electric motor and is very effective in removing water from the air in a building.

having humidity above 60 percent than below, relatively more caution will be necessary in harvesting and processing the honey.

Leaving honey on the hives too long can result in fermentation in damp cool weather. Even though the cells are capped completely, the moisture content of the honey may be above the safe limit and result in fermentation either during or after processing or the fermentation may be just commencing when the extracting is being done and thus not to be noticed. One frame of such honey can start the fermentation of a large tank of good honey.

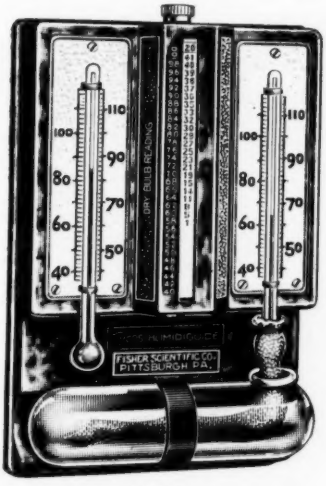
Storing the honey in a warm dry building for a few days prior to extracting helps in removing some of the moisture. If considerable moisture is to be removed, the temperature of the storage space should be close to 100 degrees F. A higher temperature may cause damage to the combs. The supers should be stacked openly and circulation of air increased by means of a suitable fan or blower and ducts with outlets distributed throughout the storage space.

There are two ways of increasing the evaporation of moisture in the storage space. This may be accomplished by bringing in fresh air from the outside through a heater, fan and ducts with suitable ventilators in the roof for the escape of the moisture-laden air. Heating the fresh air 20 degrees reduces its humidity about one half and increases its evaporative capacity quite definitely.

Another method is to recirculate the air through mechanical dehumidifying equipment such as the "Humidry" of the Carrier Corp. of Syracuse, N. Y.

The atmospheric humidity has an important role in the extracting operation. Taking ample precautions and knowing the condition of the honey before extracting pays real dividends in avoiding loss of time, honey, and sales. In extracting, the honey is broken up into small droplets and is fanned briskly by the air.

If the air has a relative humidity of 60 percent, very little change will occur in the moisture of honey having a moisture content of 17.5 percent. If the honey contains less than 17.5 percent moisture there will be a gain de-



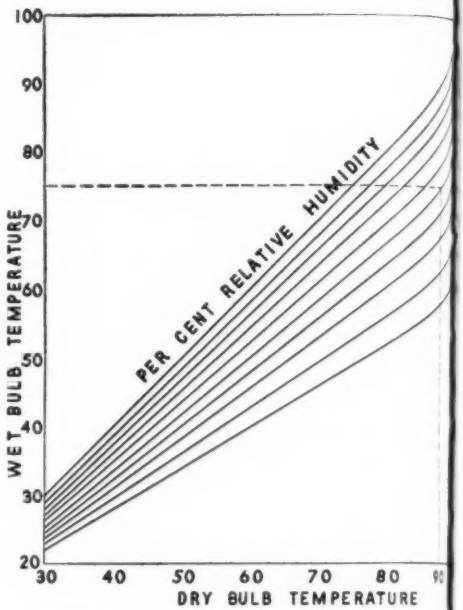
11-613

"Tycos" Humidiguide of the Fisher Scientific Co., Pittsburgh, Pa.

pending on how much the moisture is below 17.5 percent.

Conversely if the air humidity is above 60 percent with honey having a moisture content of 17.5 percent the honey will absorb moisture depending on how much the air humidity is above 60 percent. Likewise if the air humidity is less than 60 percent the honey will lose moisture depending on how much the air humidity is below 60 percent.

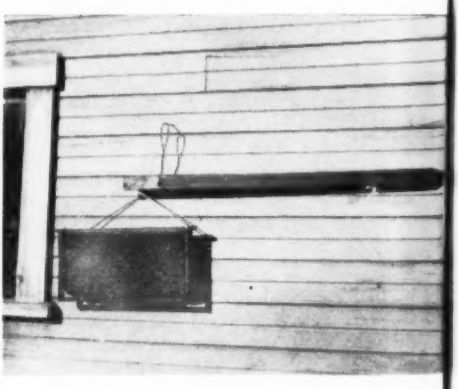
Atmospheric relative humidity is determined by use of a set of two thermometers, one of which is fitted with a wick on the bulb for dampening the bulb and the other one is kept dry. In very damp foggy weather the two thermometers will read very nearly the same which means the air is nearly 100 percent saturated with moisture



Humidity chart.

and the relative humidity also close to 100 percent.

In dry weather the wet bulb thermometer will read considerably lower



Test frame for estimating moisture content of honey due to air humidity.

than the dry bulb thermometer. The two thermometer readings are referred to a humidity table or chart from which the percent saturation and relative humidity are obtained.

A simple outfit for quickly estimating the effect of air humidity on honey is to hang a frame with comb full of honey not yet capped on one end of a wooden bar suspended near the frame end so as to balance with the other end acting as a vertical swinging pointer.

On damp days the honey in the test frame absorbs moisture and the pointer will raise toward the upper end of the chart marked "WET". In dry weather the honey will lose moisture and the pointer will drop toward the lower end of the chart marked "DRY".

If reasonable care is exercised in making this device it will be found to be quite sensitive to moisture changes in the honey. Balancing may be done by means of metal weights attached to the bar. This bar should be about four feet long and made of ¾ inch x 1½ inch pine with a hook on one end for suspending the test frame and with an eight-penny nail driven through the

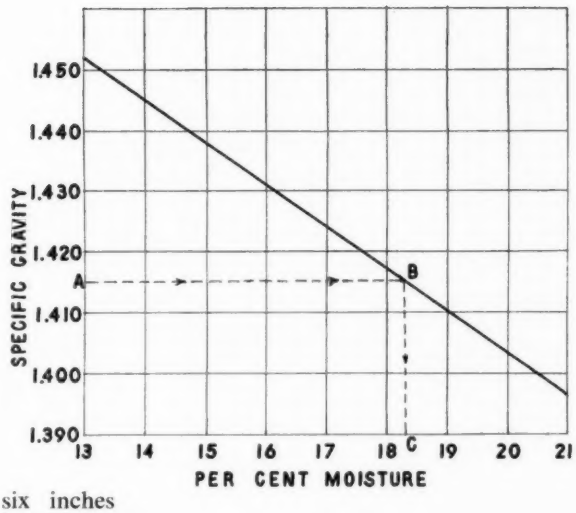
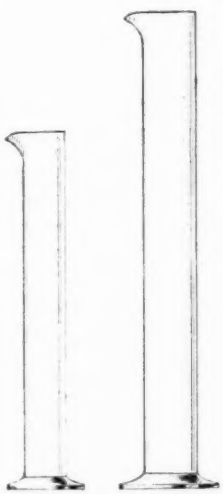


Chart showing relation of specific gravity to percent of moisture in honey. Example: If hydrometer reads 1.415 specific gravity, locate point "A", then move horizontally to point "B", then vertically down to point "C" which shows 18.3 percent moisture.

bar for suspension about six inches from the frame end and slightly above the middle of the bar. Of course, this device must be located inaccessible to robber bees, within a suitable structure or by encasing the frame in fly screen. If the percentage of moisture of the honey from the same super can be determined accurately at the same time and recorded on the chart, that will help in estimating the moisture in the test frame honey as it fluctuates from time to time.

The moisture content of honey can be determined roughly by means of a suitable hydrometer. Some of these read directly in percentage of moisture and some in specific gravity, with enclosed thermometer. A glass cylinder or hydrometer jar will be found a great help in holding the honey while using the hydrometer. Ample time should be allowed for the hydrometer to settle and become stationary before the reading is taken. An ordinary floating dairy thermometer will be found useful in checking honey temperatures.

While the hydrometer method gives only the approximate results, the equipment for accurate moisture content determination is quite expensive for the average beekeeper. The Bausch & Lomb Optical Co., Rochester, N. Y. has put out a small refractometer which is suitable for this work. This equipment is easy to operate and gives accurate results and it sells for about $165.00.



Hydrometer Jars—See "The Hive and the Honey Bee" edited by Grout for further information, tables, etc., on moisture content of honey.

Hydrometer for determining moisture content of honey.

Hand refractometer by Bausch & Lomb Optical Co.

A great deal of valuable information has been collected and tabulated by Dr. H. C. Chataway for the National Research Council at Ottawa, Canada. These tables are very handy for coordinating specific gravity, Baume reading, refractive index, weight per gallon, etc. (See ABC & XYZ of Bee Culture, P. 436).

As a precaution in preventing any honey of high moisture content getting into the main storage or settling tanks, two small checking tanks can be arranged to receive the honey alternately from the extractor. By alternately filling and checking for moisture in relatively small batches, any inferior honey can be kept from being mixed with the good honey.

(to be continued)

Requirements of a Good Smoker Fuel

By Wayne Keller, Oshkosh, Nebr.

Heretofore I have considered debate over smoker fuel a minor profitless thing, such as might attract the more opinionated. I am ashamed that I have such vicious bees that I can hardly keep a stock of cotton rags though I put on a little oil for prolonging it. I fully acknowledge the real variation in temperament of bees, but the resistant stock completely upsets my plans in so far as gentleness is concerned. For anyone who has a plentiful source of desirable fuel, I hold no grudge, provided such fuel hasn't the following faults for the unwary convert.

First, the fuel must be easily ignited, which means it must stay kindled. This will depend somewhat on its texture. For example, paper will ignite, but will smother because it mats down and cannot carry the spark or coal. Cardboard-box material kindles readily, and may serve in an emergency or may be used only to start other fuel.

The second requirement is that the fuel be of such form that the smoker may be filled so it will last. Oil will prolong the fuel and keep the smoker free of tar accumulation, but too much oil may cause an unpleasant odor which attracts some angry strains of bees.

Next, the fuel should burn slowly enough that excessive heat is not produced. Gasoline or kerosene or excessive oil are to be avoided because there is so much vapor and a demand for considerable flame and draft to keep it ignited.

Finally, the fuel upon burning must not give off a fine ash which will be blown onto the bees and honey. Were it not for this objectionable factor our western dearth of wood particles could be relieved by "cow-chips" (such as were used in the stove in early days and to some extent yet).

Fibrous materials of many kinds have an unusually calming effect, and are pleasant to the operator. Noteworthy is the dry soap-weed or yucca. A very coarse-grained composition-board or fiber-board made from something like cane-stocks is the best I've tried. It's availability would be quite universal. A large quantity gathered at building sites or government projects could be sawed into desired sizes by a power saw. If one believes in being prepared ahead of time, loosely wrapped burlap tied and then chopped into convenient lengths may be a good provision. A small quantity of oil, and sometimes saltpeter for easy kindling, may be added, but personally I like the smell of fiber or wood better than oil.

The Honey Industry

Now or Never

By Robert H. Rusher, Hyannis, Cape Cod, Mass.

This is written as a CHALLENGE. Let's face it. The honey-producing industry as it stands today is a **marginal** industry. Yet we read every day that business is booming. Production figures are up. Prices are high. Profits are high. The volume of business is high. By that is not meant that everything is rosy. But, the business is there, and sales are being made every day. But how? Nobody is having any plums dropped in his lap. To get business, to make sales at a profit requires initiative, risk, dogged determination, and salesmanship. Included in "salesmanship" and "risk" are the expenditure of hundreds of millions of dollars for advertising. Despite high prices, there is no business that can "rest on its laurels". Competition is keen. The man who gets ahead, year in and year out, is the man who offers a quality product, and **makes** the public want it.

Let us pause and reflect. Look at the "big" companies whose business amounts to billions of dollars every year. Who among us cannot repeat their catch-phrases, and slogans, and trade-names by the score? Take the tobacco companies. How long would one of the "Big Four" last, if tomorrow they cancelled every radio program, every one of their paid advertisements? Perhaps they would go along for a while on their past "good will", but soon, they would fail to attract new customers, and lose more and more of their old ones. Their volume would drop. Then and there, they would be all done, for they make a fraction of a cent a pack on their product, and unless they can keep their unit sales in the hundreds of millions, they would soon have no reserve for emergencies, and that would be the end. To make HUNDREDS OF MILLIONS, they MUST spend MILLIONS or DIE!

The Honey Industry is unique. It has a natural product that has yet to be imitated by man. It is healthful. To be the BEST SWEET THERE IS, it does not have to be homogenized, modified, fortified, pasteurized, and irradiated, until any self-respecting bee would turn up her antennae at it—IT COMES FROM THE HIVE THAT WAY!

How many "spreads" of paid advertising does one see, proclaiming the message of honey, compared to any product that is nationally known? Too few. The writer recently saw an ad in a New York paper, advertising orange-blossom honey — about the size of three postage stamps laid end to end.

Yet we have the American Honey Institute. It has done a job beyond commendation on what should be considered a shoe-string budget. Why does the American Honey Institute fail to hit the American Public in the eye with the message of honey as hard as the tobacco man does with his message? Certainly no one will say that it is because they have not the will, the ingenuity, nor the zeal to do it. That is proven. It is because they lack funds. Why do they lack funds? Because the American beekeeper as a whole (the honey producer, the package producer, the back-lotter) has failed to observe the fundamental rule of a competitive economy—that the expense of effective, large-scale advertising is a necessary adjunct to volume sales, and therefore, to a healthy, profitable business. There is not one large producer of a necessary food product who does not advertise expansively and expensively. That is how they got "big", and without it, they would not long **stay** "big".

The beekeeping industry has failed to assess itself a flat percentage of gross sales for advertising—not of one individual beekeeper's product, but the product of **all** of us — HONEY. In February, 1953, this magazine told us that the estimated crop for 1952 (which was a long way from being a bumper in most sections) was 259,000,000 pounds. Just let us suppose that for every single pound of that honey, the American Honey Institute received one little red copper cent (.01). We

move the decimal two places to the left, place the sign of the almighty dollar in the fore, and lo! we have $2,590,000.00 in cold cash. Wouldn't the face of our greatest mentor, Mrs. Harriett M. Grace, light up like a neon sign!

What is the cry? "But I can't—I got only 11 cents a pound for my crop. With prices as they are, I am barely making a living." The answer is, we MUST. The alternative is a certain decline of the beekeeping industry. The saying is "The rich get richer, and the poor get poorer." There is our alternative—do next to nothing about the promotion of HONEY—and get poorer; or do SOMETHING about it and get richer. Every time a pound of honey is sold, we are losing money—giving our product away. Read the Monthly Honey Report in the front of this magazine. Note the price of honey at retail, and then note the commodity index, with 1938 figured as 100. It is 271.1. Yet a pint of honey could be retailed in 1938 for 50 cents, or 33 cents a pound. If that price had kept pace with the price index of other commodities in the free market, today it would bring NINETY CENTS FOR ONE POUND. That is not to say that honey will ever reach that lofty price. But, proper advertising, on a national scale **can** and **will** raise the price of honey to a more equitable level.

Look at Vermont Maple Syrup (with 30 percent more water in it than honey). They ask and get $7.00 a gallon for it. Yet it is possible to buy synthetic maple flavoring very like the true article. The beekeeper is not thus threatened with such direct competition. He is in no danger of having each of the many flavors of his product imitated by the chemist, nor does the possibility of a diesel-powered nectar-gatherer threaten to displace the beekeeper's investment. The bee is here to stay. Therefore, every dollar invested in the furtherance and stabilization of the honey industry should prove wisely invested. Surely, we MUST build, for by the same token that honey prices have not kept pace with average commodity prices because of a lack of demand, be sure that when prices decline, honey will be first and hardest hit. The only way to avert this catastrophe is to create what the economist calls an **inelastic** demand for honey. That is, once millions of people acquire a real taste for honey, they will buy it with the same force that they now buy bread—regardless of whether their income is high or low. Such it was in our home in my boyhood. We consumed about 10 pounds per person per year, in BAD times as well as in good.

It has been said that the honey business is a gamble anyway. Then why not "shoot the works" and get behind the AHI and prove or disprove these arguments with cold facts and figures? We'll never know until we try, and it looks as though we have more to gain than to lose. The dollar spent for advertising is like the pound of honey left for winter stores (as Dr. Farrar proves)—it pays BIG DIVIDENDS. No prudent beekeeper would knowingly stint his bees by leaving them less than enough food. Neither, then, should he stint on his contribution for paid advertising to truly sell the American Public his product.

It seems deplorable that such a plea as appears in Mrs. Grace's column for January should have to be issued. American beekeepers, in their own interest, should **oversubscribe** AHI at all costs.

Our Government does not ask us to contribute " as much as we feel represents our interest in government". It assesses us and at a much higher percentage of our gross income than would be represented by the suggested 1 cent a pound of honey produced. But what would be our potential if we could boost our per capita honey consumption to five pounds a year? For then we would need 700,000,000 pounds of honey per year. What would that production level mean to our industry? To our beekeepers everywhere, our bee supply houses, our package industry, our queen raisers?

Then why not carry out this suggestion — EVERY beekeepers' organization from Maine to California, of every kind, whether primarily a honey producer or not, agree upon an ample flat percentage of gross income of each member, and then send out to EVERY

(Continued on page 443)

Crisp and Cool

By Mrs. Benj. Nielsen
Aurora, Nebraska

Stars and stripes cookies for that 4th of July celebration. — Photo courtesy Kellogg Company.

Coming up—crisp, flavorful cookies; tall, frosty honey-way drinks that refresh AND produce the energy that we all seem to lack during those searing days when we all droop about mid-afternoon.

Planning some outing or entertaining for the Fourth of July? Cookies baked in the cool of the morning, then a few deft strokes with a cake decorator will transform them into creations that will delight small fry and draw forth exclamations of approval from grown-ups.

Nothing is more refreshing than honey sweetened lemonade or iced tea. And with lemons, limes, and oranges in the hydrator and a jar of honey (at room temperature) you can whip up frosty treats that will perk you up in a hurry. Malted milk powder, grape juice, unsweetened fruit juices, apricot nectar, and perhaps some gingerale or a bit of carbonated beverage on the reserve shelf, insure a variety of cooling treats that will be sure to up your reputation as a delightful hostess.

Stars and Stripes Cookies

One-half cup butter, ½ cup honey, ½ cup ready-to-eat bran, 2 cups sifted flour, 1 teaspoon soda, ½ teaspoon cinnamon, ¼ teaspoon cloves, and ¼ teaspoon allspice.

Blend butter with honey and beat until creamy. Crush bran slightly. Sift together flour, soda, and spices. Add to honey mixture with bran. Mix thoroughly. Chill. Roll dough on lightly floured board to about 1/16-inch thickness. Cut with floured cookie cutters in rectangular and star shapes. Place on greased baking sheets. Bake in moderate oven 350 degrees F., about 10 minutes. Decorate with confectioners' sugar and candy stars. Yield: About 4 dozen cookies.

Honey Fruit Punch

Wash, squeeze, and strain juice of 12 lemons, 3 limes, and 8 oranges. Blend with 1½ cups honey and 2 quarts water. When ready to serve add 1 (12 oz.) bottle grape juice, 2 (12 oz). bottles gingerale and 1 (No. 2) can pineapple juice. Mix well. Serve with ice cubes.

Honey Chocolate Milk Shake

One quart milk, 8 tablespoons chocolate syrup, 2 to 3 tablespoons honey, and 12 tablespoons malted milk. Blend well and serve thoroughly chilled.

Honey Iced Tea Punch

Prepare 2 cups strong tea and allow to cool. Meanwhile stir 1½ cups honey into 2 cups hot water; add to tea and let cool. Wash, squeeze and strain juice from 4 oranges and 4 lemons. Add to tea and honey mixture. When ready to serve blend in: 1 cup crushed pineapple, 2 cups cherry juice, 4 cups ice water, and 1 quart gingerale.

Honey Cocktail

Beat 1 egg yolk and 2 tablespoons honey until frothy, then add 1 cup strained orange juice and ¼ cup lemon juice. Chill thoroughly. Pour over ice cubes and serve at once.

XUM

Two hives of bees placed in this 12-acre Hubam planting alongside a country road near Gainesville, Florida, produced nearly 100 pounds of honey each during the nectar flow. (See picture on opposite page.)

Hubam Clover in Florida

By J. Francis Cooper, Agr. Extension Service, Gainesville, Fla.

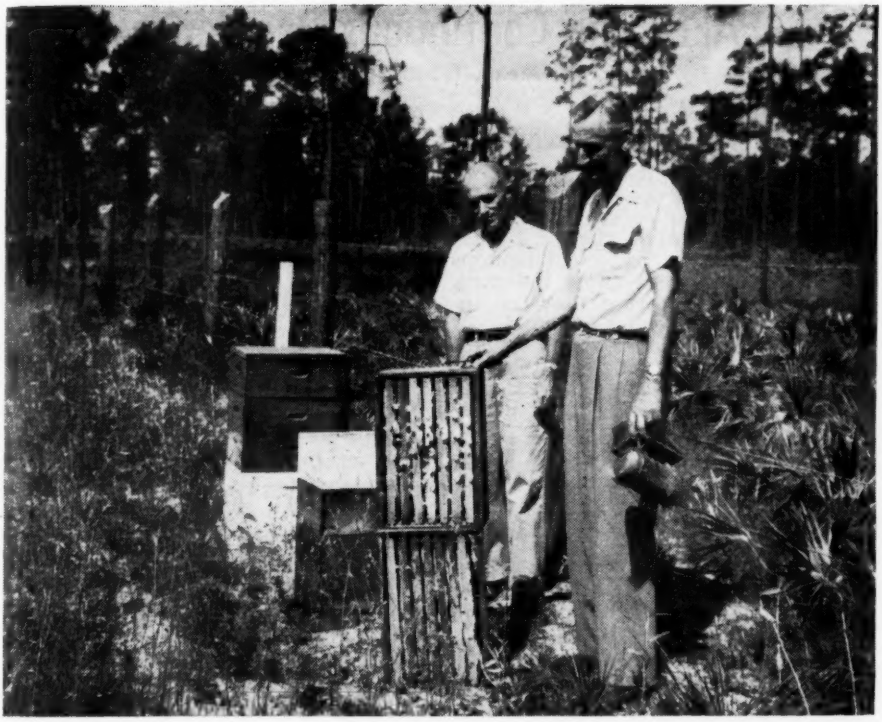
Hubam clover is being grown widely in Florida for cattle grazing, for bee pasture, and for soil improvement. When planted on properly limed soil the annual sweet clover grows practically anywhere in Florida. The Florida Experiment Station has released an improved strain, selected from hundreds of plants found growing naturally along roadsides and railroad tracks, which it has named Floranna—Florida Annual.

For the past two or three years the State Road Department has tried Hubam along the shoulders of new roadbeds and even alongside some old paving. Since it volunteered along so many roadsides, it seemed logical as a planted crop. And it keeps new roadbeds from washing while it grows during the winter and spring and adds enough nitrogen to the soil to help the planted grass establish a sod along the pavement in a hurry. Last year the State Road Department planted over 80 acres of it in roadside strips. It has planted even more this winter.

Apiculturist John D. Haynie with the Agricultural Extension Service, knowing the value of Hubam blossoms as nectar producers, arranged with District Highway Engineer R. T. Hargrave to place some stands of bees in the Hubam along some of the roadsides.

Two colonies of bees placed on a 12-acre planting along a road near Gainesville last spring produced close to 100 pounds per colony before they were moved to other pasture.

Refractometer readings by Frank Robinson, honey plant specialist of the Florida Agricultural Experiment Station, on the Hubam nectar gathered by



County Agent Loonis Blitch (left) and Apiculturist John D. Haynie with the Florida Agricultural Extension Service, check the two hives of bees which had been placed in the 12-acre strip of Hubam alongside the country road shown on previous page.

the bees ran about 33 percent, showing a very high percentage of sugar.

Apiculturist Haynie last fall distributed 2,000 pounds of Hubam seed to 20 growers in almost as many counties to make one-acre plantings to test the Hubam as a crop for their lands and as a feed for bees during the spring.

In addition to lime, Florida growers need to be sure they are getting an adapted strain—Southern grown—of Hubam seed.

Orange Honey from Florida is Proving Popular in Holland

Florida orange blossom honey is finding a ready market among the Dutch, according to Apiculturist John D. Haynie of the University of Florida Agricultural Extension Service.

Mr. Haynie has been informed by exporter G. Schneider of New York City that this Florida honey is preferred to the orange blossom sweet produced by California. The Florida sweet has been marketed by Schneider though the concern of Gebroeder Catz of Rotterdam, the Netherlands.

When marketed in Holland, the honey can be given only the low heat treatment of from 120 to 130 degrees. Dutch food regulations prohibit more intense heating which would destroy the enzymes and yeasts in the sweetening.

Honey varieties produced in this state and shipped abroad include tupelo, ilex, saw palmetto, titi, citrus, thistle and mangrove. The average European consumes 10 times the amount of honey eaten annually by the American. — Agric. News Service, Gainesville, Fla.

AFB: The Continuous Pestilence

By Robert M. Mead, White River Junction, Vt.

The history of mankind is replete with brilliant accomplishments and ignominious defeats. We have the atomic bomb but the common cold is still with us; we fly the great oceans in a few hours but what seems to be a rather simple disease of bees remains as a continuous threat to the beekeeping industry. It is moreover a threat that the industry can ill afford to harbor. It is not only the loss of diseased colonies but the loss of time, money, and equipment in an industry that for the most part can ill afford losses of any kind.

I have been inspecting bees in the state of Vermont now for two years. What I don't know about the disease would still fill a very large book yet I have arrived at what seems to be some rather inescapable conclusions regarding the disease.

To begin with, I have come to regard American foulbrood as a disease of the beekeeper rather than of the bees. It is the bees, or the brood, if you wish to be exact, that the germ attacks yet the fact that we have the germ with us at all seems a human weakness, an expression of our inability to put knowledge to the acid test of everyday use.

Combs showing the irregular, scattered cells with the perforated and sunken cappings of American foulbrood.

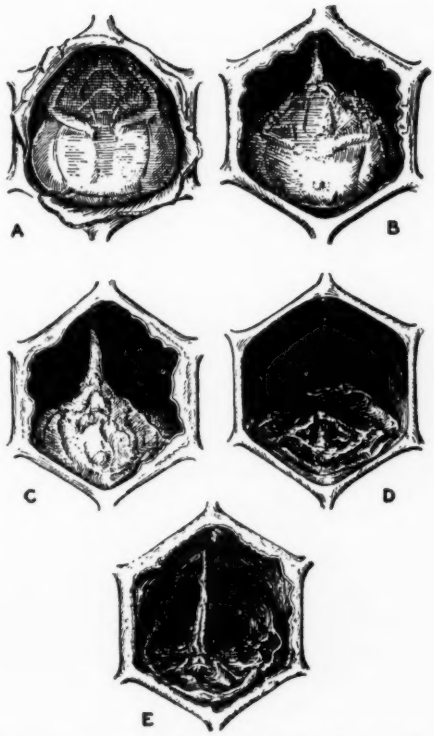
For I believe that we have the knowledge that properly used would eradicate the disease, and not only that, but we have had the knowledge for some time.

Why then, one immediately asks, do we still have foulbrood? And the best answer to that is that beekeepers are after all only human, and in giving that answer I am not trying to be cute, nor obtuse, nor trying to confuse the issue. For it is the weakness of humanity in general and of beekeepers in particular that keeps the disease going.

If one is to name the major factor in the continuing ravages and spread of the disease it is carelessness, and carelessness in many forms. There is the case of the neglected bee yard. A beekeeper becomes old, or ill, or dies, and the once carefully cared-for bees become a little infected and then heavily infected and in turn infect a whole district. There is the case of the beekeeper who keeps bees but who has scarcely a bit of real knowledge about them. When a colony dies he lays it to the weather, the moon being in the wrong place in the sky, or the plants that yield "bad" honey. Perhaps all the time he has foulbrood but he wouldn't know it if he stood in it up to his eyes. Unfortunately also there is the man who knows but doesn't care. When his bees die of disease he gives some one a bargain in used equipment.

On the other hand, there is the sort of carelessness that lies in compromise, in doing a job partly, instead of perfectly, and most all of us are guilty at some time or other of that. Surely as bee inspector for the northern half of the state of Vermont I know I am guilty of doing the job on a considerably less-than-perfect basis. For one thing, I have half a dozen jobs and one interfers with another. For another, no one knows where all the bees in the state are. Every summer I discover some one off on some back road with 20 to 30 colonies who does not belong to the association, does not take a bee magazine, and in fact seems to be unknown to everyone except his next door neighbor.

If I am guilty of compromise then in a like manner most beekeepers and the industry are guilty. The beekeeper, almost always rushed with work, does not discover the disease as quick as he should and



Stages in the decomposition of pupae dead of American foulbrood: A, B, C, Heads of pupae showing progressive stages of melting down and decay. In B and C the tongues show prominently. D, Scale of American foulbrood formed from the drying down of a diseased pupa. E, Scale of American foulbrood formed from the drying down of a diseased pupa. with a vestige of the tongue adhering to the roof of the cell.—From Government Bulletin, Department of Agriculture, No. 1713.

then fools around with it after he does discover it. He attempts some form of treatment but often does just half a job of it. Then the industry itself or at least the part that specializes in selling queens is guilty of another piece of carelessness; they advertise resistant queens, and the devil himself could not define the degree of resistance or for that matter prove on an absolute basis that some of the queens so offered are in fact actually resistant at all.

Yet resistance is one of the really great and practical weapons that we have against the disease. I have emphasized the human factor in the continued existence of the disease because strangely enough it is the fact that humans keep bees that

keeps the disease going. If bees were left to themselves the disease would nearly, if not entirely, disappear. I believe that something along this line was clearly demonstrated in Hawaii some years ago. AFB, for a time at least, nearly wiped out beekeeping there. Yet wild swarms, and an odd tame one, that did survive, were clean, showing that an almost 100 percent resistance can develop where nature has its way. As long as resistance can be demonstrated why hasn't the industry made use of it?

The answer is, of course, that the industry has tried to make use of it, but with characteristic human compromise and fumbling all along the line. Resistant bees are no rarity in this country; a number of breeders have had them so resistant that they will clean up a comb rotten with foulbrood and raise healthy brood in it. But then, somewhere along the line, something happens. The truly resistant bee may not be beautiful, so the resistant line is outcrossed to improve color, to improve disposition, and what have you, until by the time it reaches the ordinary beekeeper it is a question just what the value is. Perhaps instead of being called resistant it would be nearer the truth to call them not susceptible.

We have then one great weapon against American foulbrood, resistance, but we either don't use it at all or we use it in a half-hearted manner, so we still have the disease.

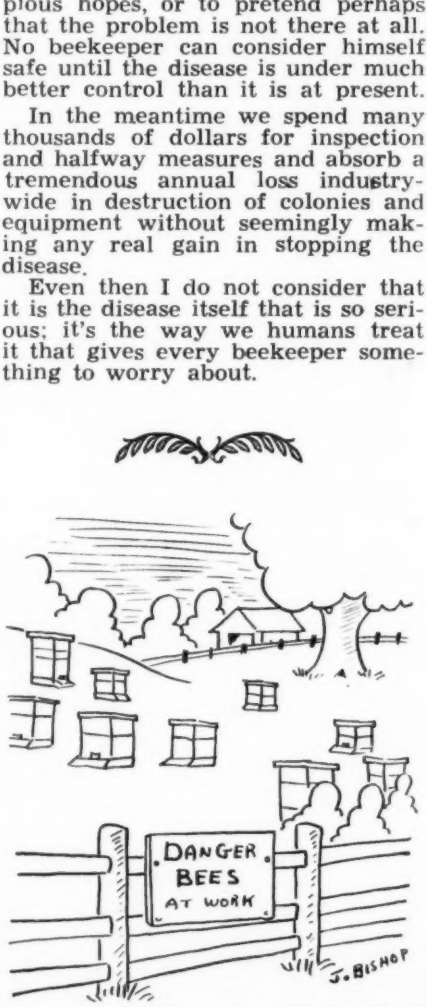
We have another great weapon against the disease in the various medications made available by advances in medical science in the past few years. The most commonly used of these new medications is sulfathiazole and in the hands of the men who originated the treatment and used it with religious attention to detail, it was a success. Then it is passed on to the rest of us and we use it in a hop, skip, and jump manner and, of course, it does not always work. There are very few medical treatments that do work unless they are done right and it is altogether too easy to cut corners in the treatment and then condemn the whole thing.

After the sulfas come a whole alphabet of miracle drugs and who can say that among them there is not a cheap and easy and practical cure for AFB. This past summer the writer used aureomycin on a couple of diseased colonies with some apparent success and I understand that others had the idea before I did. Still research along this line has been quite sketchy and I feel safe to say, inconclusive. If not aureomycin, then perhaps another of the 'mycin group is the answer. We need research, but mention research to a group of beekeepers and everyone looks bored and sad and searches desperately for a happier subject to talk about.

That is another and perhaps the worst of our human failings, we cannot seem to make up our minds to a direct attack on the problem. It is easier to sidestep, to entertain pious hopes, or to pretend perhaps that the problem is not there at all. No beekeeper can consider himself safe until the disease is under much better control than it is at present.

In the meantime we spend many thousands of dollars for inspection and halfway measures and absorb a tremendous annual loss industry-wide in destruction of colonies and equipment without seemingly making any real gain in stopping the disease.

Even then I do not consider that it is the disease itself that is so serious; it's the way we humans treat it that gives every beekeeper something to worry about.



Dr. Crane Visits Our Continent

By R. B. Willson, New York, N. Y.

America is to be favored this summer with a visit from one of the outstanding scientists of the beekeeping industry. She is Dr. Eva E. Crane, Director of the Bee Research Association, and Editor of the Bee World.

Dr. Crane has a Master of Science degree in mathematics and a Doctor of Philosophy in physics, both from London University. She has been a beekeeper since 1941 and succeeded Miss Annie Betts as Editor of the Bee World in 1950, when she introduced apicultural abstracts to this magazine, which are summaries of important articles on beekeeping from five hundred different journals published in thirty or more countries and in as many languages.

Dr. Crane's lectures here will include the following subjects from which local societies will make their selection.

1. "Two thousand years of English beekeeping." (slides or epidiascope)
2. "Some recent discoveries about bees." (slides or large pin-up diagrams —not essential)
3. "A progress report on bee research in Europe." (slides—not essential)
4. "Beekeeping and bee research: the world picture today." (slides—not essential)
5. "The Bee Research Association: how science can help the practical beekeeper." (Could have slides, or various exhibits)
6. "A tour of beekeeping in modern Europe." (slides)

Dr. Crane's itinerary is as follows:

July 23 Arrive New York C/O R. B. Willson, Inc., 250 Park Ave., New York 17, N. Y.

July 24-30 C/O Mrs. Root, 53 Western Ave., Westfield, Mass.

Aug. 1 & 2 Tri-State Meeting, Hamilton, Illinois C/O Dadant and Sons.

Aug. 3 & 4 University of Wisconsin, Madison, Wisc., C/O Dr. C. L. Farrar.

Aug. 5 & 6 Tour of Michigan C/O Mr. Baxter Woodman, A. G. Woodman Co., Grand Rapids 4, Mich.

Dr. Eva Crane

Aug. 7 & 8 Tri-State Meeting (Ohio-Michigan-Indiana) Angola, Indiana C/O Prof. B. Elwood Montgomery, Purdue University, Lafayette, Indiana.

Aug. 9 & 10 Medina, Ohio C/O A. I. Root Co.

Aug. 11-14 Canada C/O Prof. G. F. Townsend, Ontario Agricultural College, Guelph, Ontario.

Aug. 15 New York State Meeting, Rochester, N. Y. C/O Professor E. J. Dyce, Cornell University, Ithaca, N. Y.

Aug. 16-18 Cornell University, Ithaca, N. Y. C/O Professor E. J. Dyce.

Aug. 21 & 22 Univ. of Mass., Amherst, Mass. C/O Prof. Frank R. Shaw.

Aug. 25-28 Beltsville, Maryland C/O Mr. James I. Hambleton, U.S. Dept. of Agriculture.

Aug. 29 New Jersey State Beekeepers' Association. Place of

(Continued on page 443)

Editorials

Moral Supports Next? In these days of support prices and the accompanying complications, it is understandable how the following incident occurred.

Secretary of Agriculture Benson was discussing the problem of price supports on farm products with representatives of the press. He made the statement that it was going to take time to work out solutions to the many complex problems facing agriculture. He added that it was going to take men in the department with moral fiber. . . .

A voice from the rear of the room broke in with, "Mr. Secretary, what is the support price now on moral fiber?"

* * * * *

Control for Nosema? Canadian beekeeping specialists at Ottawa are optimistic about controlling Nosema Disease with fumagillin. This new antibiotic was found to significantly inhibit the development of the organism in inoculated worker bees held in cages. Nosema is a disease of adult bees, universal in its occurrence, which causes considerable losses to the industry in Canada.

L. Bailey, of the Rothamsted Experimental Station, points out that Nosema-infected bees under treatment can have a relapse when the drug is no longer fed to them. He fed fumagillin in a mixture of sugar syrup.

* * * * *

Competitor Honey Plants Do plants actually compete for the attention of honey bees? Dandelion and yellow rocket are frequently accused of attracting honey bees from apple blossoms, and this was recently confirmed by a study completed at the Cornell Agricultural Experiment Station.

And now the specialists of the Division of Bee Culture of the U.S. Dept. of Agriculture found that competitor plants can greatly reduce the effectiveness of honey bees in the pollination of red clover. According to their report ladino clover attracted most of the pollen-collecting honey bees from red clover while nectar-collecting bees visited alfalfa.

Even when the number of colonies was increased to seven per acre the difficulty was not corrected because of the large acreages of the competing plants.

* * * * *

Be Alert for AFB Before removing this year's crop of honey be sure to look into the brood chamber for any signs of American foul brood (AFB). It might mean a little more work, but finding this disease in its early stages can save any large losses later. If in doubt about the appearance of AFB, why not invite your local bee inspector to work with you? He will be very glad to have your help in opening and closing hives so that the inspection job can be completed before the bees get any ideas about robbing. Periodic inspection of your colonies is a good form of business insurance.

* * * * *

At Last a Beekeepers Museum The British Beekeepers' Association and the Bee Research Association had their first exhibition of the National Beekeeping Museum in November 1952. The aim of the Museum is to collect material and information necessary for presenting a picture of the history of beekeeping.

These groups are to be commended on their efforts to preserve beekeeping relics before they are lost to the industry. The late Dr. E. F. Phillips started a collection of antique beekeeping equipment at Cornell University but this has since been confined to bee-decorated crockery.

Already a clearing house for scientific research, the Bee Research Association is now doing the same job to historical beekeeping items. Besides beekeeping equipment, the collection boasts of a letter from Charles Darwin to T. W. Woodbury expressing his interest in the new "artificial comb".

The collection is now housed in the Museum of English Rural Life (Uni-

versity of Reading), and Mrs. R. M. Duruz is the keeper. All gifts to this worthy cause should be sent to the National Beekeeping Museum, c/o M.E.R.L., 7 Shinfield Road, Reading, Berks, England, and kindly enclose a note giving your name and address.

* * * * *

Mechanical Bee? The spring 1953 issue of "FORD FARMING" features the "Mechanical Bee", a new machine reported to pollinate alfalfa more efficiently than the honey bee. The equipment creates the conditions necessary for good pollination.

In case of alfalfa, Al Goff, the author of the article, indicates that three conditions are necessary. "The blossoms must be tripped to expose the pollen, the pollen must be dry enough to turn into dust and the dust must be blown through the air to cross-pollinate nearby plants."

The Mechanical Bee is constructed to create these conditions. According to Goff, foam rubber rollers trip the blossoms. A butane gas unit heats air which is blown into a pollination chamber behind the rollers. This, Goff adds, "dusts" the pollen and blows it around.

Some western farmers have already reported good results, indicating that their seed production may be doubled or tripled with this machine. But beekeepers who have been dealing fairly with seed growers won't have much to fear in spite of the EARLY SUCCESS of the "Mechanical Bee". Providing strong colonies at fair rentals will discourage any investment in new equipment that can be used only once a year.

* * * * *

Planting Windbreaks It goes without saying that an efficient windbreak is necessary for good wintering. In some areas a windbreak enables bees to winter well without packing, but even in the northern regions a good windbreak will insure more successful wintering.

The higher the windbreak, the further the protection extends. A 30-mile wind striking a windbreak 35 feet high drops to a velocity of 8 miles per hour at a point 100 feet on the leeward side, according to the USDA Soil Conservation Service. At 400 feet, the velocity is only 15 miles per hour, and even at 700 feet, some protection is still afforded.

A windbreak should, of course, be planted on the windward side from which the prevailing winds come. Usually this is the north and west. If drifting of snow on the leeward side may be a problem, plant the trees back about 100 feet to allow the snow to pile up without blocking the entrances to the hives.

Fast growing, compact evergreens should form the main planting. They are usually considered more suitable because they hold their foliage the year around. A combination of pine (red, white, or Austrian) in the windward row or rows, and spruce (white or Norway) may be used.

* * * * *

Weevil Now in Ontario The sweet clover weevil, long a serious pest in North Dakota and other western states, is now making its appearance in eastern Canada. They have been reported plentiful east of Toronto and also in the Guelph district. The adults often cause serious injury to new seedlings of sweet clover, one of the best sources of nectar.

The damage by this insect is mostly caused by the adult. It is a small snout beetle, rarely seen as it drops from the plant when disturbed. They eat crescent-shaped pieces from the sides of leaves of sweet clover.

Yellow sweet clover (**Melilotus officinalis**) is a tall, rank-growing annual that blooms in June. It is frequently found in waste places and along road sides. The sugar concentration of the nectar averaged 62.0 percent according to a recent study completed at the Cornell Agricultural Experiment Station. The honey is generally very white and has a mild flavor.

* * * * *

Attention— Bee Inspectors A new time-saving and simple method for diagnosing foulbrood has been developed at the Beltsville, Md., bee culture laboratory. This will be good news to the beekeeping labs receiving questionable brood samples from state apiary inspectors.

The technique calls for a coverslip containing a stained smear to be in-

verted on a glass slide covered with a film of immersion oil. This results in the water on the coverslip becoming entrapped in the form of droplets in the oil. If spores of **Bacillus larvae** are present, the scientists say, they will be concentrated in these droplets.

The advantages of this method can be quickly pointed out. The slides are easy to prepare, the concentrated spores are easy to locate, and the "streaming" of spores is eliminated. But a big advantage lies in the fact that the mounts do not dry out. Now many slides can be prepared at once and their examination delayed several days.

* * * * *

Keeping Honey Liquid Much of the Canadian honey that goes into retail channels is "Dyce-processed", since most of their domestic honeys tend to crystallize rapidly during storage. As a result consumer preference for liquid honey has never been exploited in Canada.

Specialists of the Division of Apiculture at Ottawa have developed successful methods that may change this situation. They have made more efficient utilization of the pasteurization heat treatment to completely liquefy honey. It was found that more stringent control of temperature during application is effective in retarding the development of crystals in liquid honey.

According to the Canadian specialists, storage at low temperatures after pasteurization kept the honey liquid during storage. In addition, there was the added advantage of delaying crystal development for a significantly longer interval when the honey was brought to ordinary temperatures.

* * * * *

What's New with Insecticides With more beekeepers continually turning to pollination services as a new source of income, there has quite understandably developed a great interest in modern insecticides. If pollination is your business, then you should know the effects that different insecticides might have on honey bees.

Prof. Nevin Weaver, entomologist at the Texas Agricultural Experiment Station, has recently reported his results of a four-year study on the toxicity of insecticides to honey bees. He concluded that the increasing order of toxicity to bees of several insecticides widely used on field crops is: toxaphene, DDT, chlordane, BHC, 3-5-40, aldrin, dieldrin, parathion, and calcium arsenate. And Weaver recommended that colonies of bees should be located at a considerable distance from fields to which insecticides are to be applied.

At present, growers of alfalfa, birdsfoot trefoil, and red clover are seeking honey bees for pollination. Usually some insecticides must be applied to control spittle bugs or other insects if a profitable crop of seed is to be harvested. Beekeepers who are familiar with the toxic insecticides can reduce the losses to their colonies by working closely with the grower on his insect-control program.

* * * * *

Where to Keep Bees in New York One of the best beekeeping areas in New York State runs from Albany to Buffalo, lying generally between U. S. Routes 5 and 20, according to a study recently completed at Cornell University, Ithaca. The abundance of nectar-yielding legumes growing in this limestone belt is probably responsible.

Parts of Lewis, Jefferson, St. Lawrence, Clinton, and Washington counties are also very good areas. The Hudson Valley is generally of secondary importance, while the Adirondack region is a poor place to keep bees.

According to the report, the decreased planting of buckwheat in many counties, such as Tompkins, Cayuga, and Seneca, has made these areas less attractive to commercial beekeeping. Beekeeping specialists at Cornell University were hoping that Birdsfoot Trefoil would save the day but this legume is still only of minor importance.

The revealing news about thornapple was one of the highlights of the study. This plant proved to be of little value to bees in spite of the general belief that thornapple yields lots of nectar and pollen. It is believed that the pungent odor of thornapple, similar to the insect appealing odor of skunk cabbage, attracts the honey bees.

From North, East, West, and South

NORTHERN CALIFORNIA, June 1

Weather: Continued cool and cloudy, interspersed with too few days of sunshine, and an occasional shower, is a description of the weather we have had during the past month. Snow fell heavily in some sectors of the higher mountains on at least two occasions with some hail at lower elevations. The showers were sufficiently heavy to improve the wild plant growth and grain during the first of the month. The total rainfall for the month was 0.35 inches which brought the seasonal average to 16.23 inches against a normal of 16.60 inches.

Condition of Plants: Nectar and pollen plants show the effect of a lack of soil moisture and nectar supply has been below normal because of continued cool and cloudy conditions. Yellow star thistle is beginning to show well along the highways and in some pastures. Purple vetch is also abundant in some areas and is said to have yielded well when weather conditions were favorable. Manzanita also yielded in areas where it was not frozen back but the bees consumed much of what they gathered during the many days they were confined to their hives.

Condition of Colonies: The strength of colonies is just fair because of the shortage of nectar and pollen. Most of the colonies have cleaned out all of the old honey normally found in corners of their combs and most beekeepers have exhausted their supply of combs of honey held back for feed. If there is any AFB in any of the hives, it should show up this year. Two-queen colonies have used about twice the amount of honey as single-queen colonies, with the honey flow still some two or three weeks away.

Much dry sugar has been fed to colonies this spring and has kept the colonies going without causing any robbing. There was no evidence of waste in our colonies when the sugar was placed in feeders. They have a greater tendency to carry it out of the hive when it is simply poured through the entrance onto the bottom board. At least one beekeeper has made up a number of Doolittle division-board feeders in which to feed dry sugar, efficiently.

The beekeepers have been searching for locations which will support their colonies this spring and, as a result, bees have been concentrated in the more favorable locations. Seed alfalfa fields will be coming into bloom soon and these concentrations will be thinned out with the removal of bees to the seed fields.

Mechanical Loaders: Interest still remains high in the perfection of hive loaders which can be used not only in moving heavy hives of bees but also in general lifting in the apiary. Three different types of loaders have been built in central and northern California during the past few months, each one having some differences over previous loaders. The two most recent loaders have tended to lighten the weight and to simplify the mechanism. Both are battery operated and connected with the truck generator. Both are gear driven. Those who are using hive hoists are well pleased with the ones they have and will soon weed out any "bugs" that may develop in their operation in order to make them dependable and more efficient. The industry needs these devices to take the back ache out of the lifting of heavy hives or supers and to make it possible for one man to load and unload hives and still be in good condition at the end of the day, or rather after the night's work of moving bees.

Miscellaneous: There was an account of the recent death of a man in Los Angeles soon after he received the sting of a bee while washing his car. He was but 34 years of age and died before medical care could be summoned. Such an unfortunate event emphasizes the need for the dissemination of information about the antidotes for bee stings or the poison of stinging insects, and the urgent need of applying the remedies as soon as any

XUM

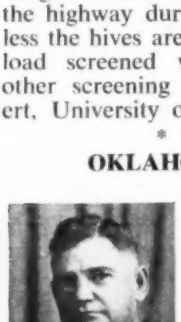
person shows general discomfort from the effects of a sting. Beekeepers throughout the United States can be of great service in this regard by calling attention to the fact that an injection of adrenalin, administered soon after a highly sensitive person has been stung, or as soon as any systemic discomfort is felt from a bee sting, will counteract within a few minutes the ill effects of such reactions. The symptoms may be a shortness of breath, difficulty in breathing, "hives" on different parts of the body, or even the loss of consciousness. Ephedrin capsules, taken by mouth, also give relief but usually take a slightly longer time. Some of the antihistamines are also said to be effective but adrenalin is the most effective and should be administered by injection immediately any serious symptoms are manifested. Quick action may save a life.

Persons who know they are sensitive to bee stings should carry either adrenalin and a syringe with them at all times, or capsules of ephedrin, for stings may be received while camping, or fishing, or while riding in cars, far removed from medical care. Fortunately, only about one person in a thousand is said to be highly sensitive to the poison of stinging insects but the information for the successful treatment of such cases should be generally known.

Beekeepers should do everything possible to reduce the hazard of bee stings. Bees should not be hauled on the highway during daylight hours unless the hives are screened or the entire load screened with lumite or some other screening material.—J. E. Eckert, University of California, Davis.

* * * * *

OKLAHOMA, June 1



Weather: January was a mighty warm and dry month in Duncan with only .13 of an inch of moisture from a snowfall and an average daytime maximum temperature of 61 degrees. There were 10 days of readings in the 70's and 80's with a maximum of 81 degrees on two days and another with an 80 degree high. This "June in January" set a record. On April 19 temperatures hovered around the 36 degree mark at midnight Saturday, and on May 2 a temperature of 97 degrees was registered about 2 P.M.; and a far cry from the high of 51 degrees only eight days ago. Rainfall during the first four months of 1953 totaled nearly two inches below normal. The total through April 30 was 7.95 inches compared with a 9.38 inch normal for the period. Moisture here totaling 5.47 inches during March, or 3.31 inches above normal, boosted rainfall through April this year above the 7.39 inches for the same period a year ago. The 1952 annual total was 23.19 or 10.96 inches below normal for the city.

Honey: Honey production in Oklahoma during 1952 was estimated at 1,620,000 pounds compared with 1,568,000 pounds in 1951 and 1,624,000 pounds in 1950, according to the Federal-State Crop and Livestock Reporting Service. Production per colony of bees in 1952 was estimated at 30 pounds compared with 28 pounds in 1951. The yield was good in 1952 in localities where there was adequate rainfall for growth of nectar plants during the summer. There was less than the usual damage from excessive rains diluting or washing nectar from plants. However, rainfall was too low in many sections for adequate vegetative growth. As of December 15, 1952, producers had 243,000 pounds of honey on hand for sale. The average price received for honey sold in 1952 was 21.3 cents per pound compared with 19.7 cents in 1951. More than half of the honey produced in the State is sold at retail by producers.

Bees: Colonies of bees came through the winter with very light losses and were building up rapidly during this period. However, considerable feeding was done. Willows, maples, cottonwood, peaches, wild plums, and dandelions were in bloom and furnished nectar and pollen. Plant conditions are extremely variable over the State. Recent good rains in the eastern and central portions have been beneficial, and prospects appear fairly good for honey plants. Conditions continued dry in the western portion and in some

locations reports indicate there will be no clover. There is some moisture in the ground in the southwestern corner and farmers were planting alfalfa.

Miscellaneous: The week of April 5 to 11 was a "honey of a week" in Duncan. The Oklahoma Agriculture Department had announced the period to be a "Honey for Breakfast Week" throughout the city. Window displays of live bees, posters, information pamphlets, and other displays were placed in various places during this week to promote the idea of honey being an ideal food. Tom Fox, Marketing Specialist of the State Agriculture Department, and Jack Clapp, Director of Visual Information for the Department, will handle the project here in cooperation with Glen Gibson, Minco, Oklahoma and the Oklahoma State Beekeepers' Association and the Stephens County Beekeepers' Association. With the help of Mr. Edward Gregory, our County Agent and Mr. C. F. Stiles, Extension Entomologist, our Stephens County Beekeepers' Association is doing fine.—V. K. McMasters, Duncan, Oklahoma.

* * * * *

NEBRASKA, June 3

Weather: Nebraska had a very dry fall. Just shortly before Thanksgiving Day, over a foot of snow blanketed the south-central and eastern parts of the state. For months we did not see bare ground as new falls whitened greyed old snow. A slow thaw permitted all of this moisture to soak into a parched soil. Other sections were not so favored, western Nebraska suffering dust storms frequently during the winter months. So far we have had fair rains in the nick of time, but high winds have subtracted some of this moisture.

Condition of Bees: There were no protracted periods of severe cold weather so bees amply provided with winter stores came through fairly well, averaging about ten percent loss. A cool late spring held them back, but bees have built up fairly well on dandelion and fruit bloom, and are beginning now on yellow sweet clover.

Crop Prospects: There is uncertainty about the sweet clover from which our main crop of light, mild-flavored honey is derived. Moisture last fall was very scant. Even the hardy smartweed, source of our dark fall honey flow may have been hurt for the same reason.

Honey Market: Sales of honey are very slow. Beeswax prices are declining.

Miscellaneous: We do not expect any show of interest in bee pollination services for alfalfa or the clovers this year. The farmers around here have tried it out for the past three years with very disappointing results.

We have been watching with interest a television program sponsoring a honey bread which is delivered door to door rather than sold through the stores. It is named Omar's Vitality Loaf, featuring honey and butter and advertised as "old-fashioned homemade bread." Whole wheat and wonderful for toasting—as is any honey bread. Good, practical advertising for honey.

There is also now available and advertised in magazines of national circulation, a honey spice cake mix which should prove to be another boost for honey, as more and more homemakers become accustomed to using the handy time and energy saving cake mixes. —Benj. Nielsen, Aurora, Nebraska.

* * * * *

TEXAS, June 8

Weather: During the week of May 10 when devastating tornadoes brought disaster to Waco and San Angelo most of the State received general rainfall—the heaviest in many months. While most sections were greatly benefitted by the rain some local areas experienced flood damage. However, drouth still persists along the Mexican border and in most of west Texas. Daily temperatures have been high and drying winds have dissipated soil moisture.

Bees, Plants, and Honey Crop: No

loss of colonies of bees has been reported from the storm area but some losses occurred from flood. During most of the current spring season nectar yield was rather disappointing. Overwintered colonies had supplies of reserve stores generally considered adequate for spring build-up, and little additional feeding was anticipated. However, with scant supplies of fresh nectar, reserve stores were depleted rapidly and extensive feeding was necessary for an unusually long period. The critical period came in the middle of May during a week of daily rain and cloudy skies when no nectar was available. Many colonies ran short of stores and those not fed in time were lost from starvation or deteriorated badly. With adequate rainfall flowers improved rapidly and within a few days a good flow was underway. Colonies which recently were on the verge of starvation within three weeks made gains of up to 100 pounds. Weak colonies will do no better than build up on the flow.

In the blackland area where earlier rainfall was adequate, Texas marigold (**Gaillardia pulchella**) bloomed abundantly and bees gathered heavily of the golden yellow honey and also from other wild flowers. In sandy and mixed soils horsemint is now in the midst of bloom but the plants are spotted with a good stand and honey flow in some locations but with little elsewhere. Bees have been moved to sweet clover locations in north Texas. This crop is now more generally utilized for pasture and hay rather than for seed, consequently sweet clover cannot be counted on for bee pasture as in previous years. Vetch which offered much promise a month ago proved disappointing as a result of infestation of anthracnose following a week of excessive rainfall. Individual fields in well-drained situations escaped the ravages of this disease. There was an excellent bloom and seed set and bees gathered a fair crop of honey. At the present time there is a good bloom of mesquite over a wide area but no honey flow has been reported thus far from this source. During the next several weeks honey from various mixed sources will be extracted but the amount harvested will vary widely over different locations. Earlier during the season a honey crop was reported from crimson clover, linn, and mixed flowers in several points of east Texas. Also in some favored localities of south Texas a small crop was obtained from guajillo.

Market: Thus far little new crop honey has reached the retail market. There is little white honey or comb that has been offered from the new crop. Both are in good demand by packers. Retail prices are unchanged.

Miscellaneous: For some years beekeepers have been using screened trucks for moving bees. Recently several producers are using plastic screen covers of such material as "lumite". These are very convenient in the ease with which they can be put on and removed, a decided advantage over fixed screen bodies. The use of moving bees under screens is to be commended. No longer will infuriated bees be free to attack people along the route of travel. —A. H. Alex, College Station, Texas.

* * * * *

VERMONT, May 30

Weather: In the quarter just past we can describe the weather as being just one word, **Wet.** After March, we had much rain in April that helped to restore the water table to more normal condition. A warm, dry March also pushed things ahead of schedule, but cold spells since then have put the schedule of plants to a more normal time table. We hope rain will continue to keep legumes growing and extend the honey flow.

Bees: As is general over most of the country, bees here wintered very well. Stores were ample and they have built up well for the honey flow, which should start in less than two weeks. Is there a new mystery disease affecting bees? Last year I had several yards in excellent strength all ready for a honey crop, but after the honey flow started, and we went around to put on supers, there just weren't any bees flying. Examination in the hives showed everything to be normal, except

there just weren't any bees, not even dead bees at the entrance. The first yard was near an orchard so suspected parathion spraying, but other yards not near orchards were also affected. Was it airplane spraying of DDT? This doesn't seem likely as bees I know were in such an area were not affected. I have now heard of similar cases in New York State, where some beekeepers are also mystified as to what happened to the bees. I have seen yards where bees crawl all over the ground with a sort of paralysis just at the start of the honey flow, but this showed no bees dying in the yards. It seems to affect all the colonies alike. It seems to act like some kind of poisoning—the question is what?

Honey Plants: With the abundance of rain this spring, clovers look very good and for the first time in many years we can actually see some pieces of natural pasture clover. Evident also are volunteer fields of clover and new seedings look very good. With the modern practice of early cutting, the question is how much good will the bees get from it. Plenty of rain should discourage cutting too fast. Birdsfoot trefoil continues to expand and the early strains have already started to bloom. The Empire strain blooms about a month later and after that the early strains bloom the second time. If anyone likes to day dream, it certainly is wonderful to dream about fields of early and late trefoil giving a continuous bloom from the 1st of June until almost frost. Far as I have been able to see, the bubbles a beekeeper blows in his dreams are made of pretty thin stuff. They have an awful habit of blowing up in your face just when they have you riding high.

There's the case of spittle bugs, they seem to love trefoil, and there is some talk of spraying with DDT. As a general thing, DDT kills off all predators of mites and aphids so while one may get rid of spittle bugs with DDT, he is making himself wide open to worse damage with mites and aphids. In order to kill these, a much more toxic spray is needed. This in turn no doubt will upset more of nature's balances so more spray will be needed to counteract that. If farmers ever start spraying their field crops, they will end up in the same fix as the orchard men. Spraying breeds more spraying until you end up doing nothing but spraying. Yes, spittle bugs do some damage, no doubt, but they have their parasites and Mother Nature keeps them pretty well balanced up. Any spraying program will lead up to far more damage and cost in the end than any caused by spittle bugs.

Miscellaneous: Honey market continues fair and our stock will be all sold before the new crop is available. Now that we are in the process of building a new shop, we just have to get a honey crop, God willing.

Interest also continues in research of therapeutic values of the various bee products, such as honey, pollen, royal jelly, and bee venom. Bee venom seems to have metabolic properties which are truly amazing. Last month I requested information from anyone that knew of cases where the various bee products have shown beneficial effects on the various degenerate diseases, especially cancer. While I know there must be many cases where bee products have accidentally or intentionally given beneficial results, not many beekeepers have responded as yet to write me about them. If you do know of any such cases with any degenerative diseases, let me know all the facts of the case, such as name and address of persons involved. This information will be relayed to research centers where it will do the most good. Remember also to send what royal jelly you can collect to: Dr. C. Chester Stock, Sloan-Kettering Institute, 444 East 68th Street, New York City, N. Y.

We hope in our next news letter we can tell you about a bumper crop. In the meantime we hope you can all have one also. — Charles Mraz, Middlebury, Vermont.

* * * * *

WASHINGTON, June 12

The Weather: This spring has been rather cool, cloudy and much rain. The past winter was very mild and wet also, with January being tops with moisture of almost 20 inches during the month, just an inch or two less than we received all last year. We have had very few rainless days since then, and at the present it does not look too favorable for much honey

this season, as everything is two or three weeks late.

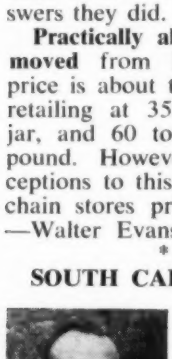
Condition of Colonies: At the present time there is much feeding going on as there has been no spring flow and the colonies have built up mostly on syrup. Swarming has been very much in evidence, especially where the bees have not had the proper attention. This writer has been called many times to take care of swarms and surprisingly many times when it was raining. I have hived some of the largest swarms that I have ever seen, one especially which I placed in a ten-frame empty super on top of a brood chamber and shook the bees into the super. They rolled over the sides of the super. That was one swarm that required two supers to hold them.

Miscellaneous: Recently we were called on to give a local Girl Scout troop an examination in bee culture, which we were glad to do, and was indeed pleased to find that this group was so very much interested in the keeping of bees. Those ten and twelve year olds really put questions to us that were surprising, and they answered them equally well. None of them had ever seen the inside of a hive until that day but they had evidently done a lot of reading to know the answers they did.

Practically all local honey has been moved from last year's crop. The price is about the same as a year ago retailing at 35 cents per one pound jar, and 60 to 61 cents for the two pound. However there are a few exceptions to this price. In some of the chain stores prices are a little lower. —Walter Evans, Longview, Wash.

* * * * *

SOUTH CALIFORNIA, June 11



The short production of orange honey seems only to be exceeded by the short production of sage honey. Last year history's largest orange and sage honey crops were enjoyed by Southern California beekeepers—this year the smallest. It is reported that many Orange County beekeepers harvested no orange honey at all from their colonies and instead of moving to the sage range they moved directly from the groves to alfalfa fields for pollination work because the prospects for a sage crop were most discouraging. The amount of light-colored full-flavored orange blossom honey was extremely small and very actively solicited by the buyers, packers, and dealers. It is a seller's market, and the beekeepers are holding for and getting premium prices.

The honey crop shortage caused an increased demand on the part of the beekeepers for pollination contracts. Some alfalfa seed growers took advantage of this situation and are procuring their pollination services at a lower rate per colony than in previous years.

There is not enough last year's honey held over in the hands of beekeepers to even mention. The market was cleaned up the best in years, thus presenting a healthy situation inventory-wise.

Some beekeepers are quite discouraged with the disappointing orange and sage crops in Southern California but most are accepting the situation philosophically, especially those wise and thrifty growers who retained part of their earnings from the large crops last year for the inevitable. Southern California beekeepers have experienced short crops before; they are a hardy group not easily discouraged. They will just tighten their belts a notch and get ready for a crop next year.

Harvesting is just commencing in the Palo Verde Valley and indications are that the desert blossoms and alfalfa crops will be very short there also. It is too early to tell what will be realized in Imperial Valley from the alfalfa honey crop but indications are not too exciting for a crop even average. Hope to be able to report a better honey picture next time.—Woodrow Miller, Colton, Calif.

A tri-state meeting will be held at Hamilton, Illinois on August 1 and 2. Dadant and Sons and American Bee Journal will be hosts to Illinois, Iowa and Missouri. Two out-of-state speakers will be Dr. Eva Crane, Editor of the Bee World, London, England, and Dr. C. A. Jamieson of Ottawa, Canada.

Reenforcing Comb Foundation with Wire

By H. H. Root, Medina, Ohio

It is hard to realize that nearly 75 years have passed since man first strengthened combs and prevented sagging by imbedding wires in the comb foundation. A. I. Root may not have been the first one to do this but he seems to be the first one to make mention of it. The following account of his experiments 74 years ago is interesting. It is taken from his autobiography, published in Gleanings serially after his death.

From A. I. Root's Story of His Life — Gleanings in Bee Culture, July, 1926.

Wiring Frames

In the August number of Gleanings for 1878, in answer to a correspondent who told about wrapping his combs with fine copper wire to prevent them from breaking when in the extractor, I suggested that if the wire were pressed partly into the foundation there would be little if any sagging of the comb. I also suggested that iron wire be used instead of copper, since it would be so much cheaper and after being covered with wax there would be no chance for it to rust. By the latter part of September I had brood all nicely sealed, right over wires embedded in the foundation.

Someone suggested that a heated buttonhook could be used for imbedding wires in foundation. I made a trial of it and found it worked well, but it required heating too often. Knowing that a lump of copper is about the best thing to retain heat, I had a small copper soldering iron worked over into a most convenient tool. It was heated over a coal-oil stove, and when just right it softened the wax so it stuck firmly to every inch of the wire, and the weight of the tool was just right to sink the wire into the foundation without requiring any pressure from the hands. One heating of the copper answered for ten frames.

All this was before electricity had been thought of for heating the wires. We did not have AC power current then which could be conveniently transformed to a low voltage current. My first experience in imbedding was with smelly Bichromate of Potassium batteries. These were messy and unpleasant to fool with but the wire sank by magic to the midrib of the foundation so that one could hardly tell from which side it had entered the sheet.

Later on, we began to put resistance in the 110 volt DC line. It was by using such low voltage direct current that I began imbedding vertical wires in foundation, in the year 1910. The wires were straight, taken direct from spools. To avoid the curvature they were straightened by being drawn through staples and finally they passed through brass pieces containing V-shaped notches, which made electrical contact needed to heat the wire. Sheets of foundation were laid crosswise of the 10 wires. The imbedding was a continuous process, the wires between the edges of the sheets being cut by a square shears and the sheets piled up. I made considerable foundation in this way. The ABC & XYZ of Bee Culture for 1911, showed pictures of the combs thus produced. The machine or apparatus that I built, though operated by hand was reasonably fast and the imbedding was accurate and uniform.

Who Packs the Honey in the U. S. A.

By Walter Barth, Medina, Ohio

The question of how much honey is packed by the beekeeper and the full-time packer has always been a point of interest to your Editor. Just a few days ago some information from the U. S. Department of Agriculture answered this question.

The Department does not have any official figures covering the amount of honey packed and marketed by the different groups in the industry. So their estimates of the percentages of the crop handled by various groups is based on information covering the period of 1948-1952.

Cooperatives pack and market 10 percent of the crop. (Including honey shipped under the export and diversion programs.)

Independent packers, including large beekeeper-packers, pack and market 35 percent of the crop. (Including honey shipped under the export and diversion programs.)

Smaller beekeepers pack and market 40 percent of the crop. (Including honey shipped under the export and diversion programs.)

Beekeepers withhold for their own use 10 percent of the crop.

Government price support programs handle five percent of the crop.

Of the total honey production, it is estimated that 55 percent of it is packed for table use.

XUM

Live and Learn

By Propolis Pete

I hope that youse guys out there don't get tired of me talking about the weather. But this has been such a cockeyed spring that you'll just have to take it once more.

It makes me mad as hops to read the official government reports that the temperature is four degrees above normal for this time of the year, and that the precipitation is only slightly above normal. And that after the cold, wet, miserable siege of unseasonal excuse for meteorology that has been going on. If that slightly above normal dripping off the roof don't let up pretty quickly, there just ain't going to be no more honey.

Last year we lost practically all of the fruit bloom because of rain, but this year we lost all of it. My bees have no more honey put by now than they had when I unpacked them, and they had darned little then. It was really remarkable to read the weather reports in the brood pattern. You could tell pretty closely just when the bees flew and when they didn't. There would be a ring of sealed brood, a ring of empty cells, a ring of older larvae, but no eggs. Or, just the reverse, just as you happened to strike the sunny days when you looked. Apparently when the bees did fly they brought back loads of nectar, and the queen would go into high gear. Then a bad spell would cause them to run low on stores, and she would stop. Anyway, that is what it looked like. With all that, the hives were crowded with bees.

When I saw the mob h a n g i n g around the entrances I figured that it might be a good idea to go into training as a tree climber. Sure enough, just about every colony, whether weak or strong, started to build those little cups that the bees will build when they think it might be a good idea to have a head start in case they decide to get out of there. I shuffled the hive bodies around, cut out the cups, and kept my fingers crossed.

The next week, there was a brand new crop of cups, and sure enough a couple had eggs and young larvae. Since it was a miserable day then, I couldn't see tearing the colonies apart to apply the usual control measures. The bees would have taken the shirt off my back. So I didn't do anything, but hoped for a nice day when I could look to see what was really going on. It was another week before that time came. To my surprise, the first hive that was marked as having cells, didn't have them. There was no sign of impending departure. Ditto the second colony, and so on through the whole yard. A couple did seem to be tending puny little cells in a half-hearted way, so I acted on a hunch and just killed the cells. They didn't start any new ones, and at this writing my bees show no signs of swarming.

A funny thing though. About four of the big strong ones show no eggs and no young brood. The bees are going about their business without that usual cry of distress that shows that they are queenless, when you open the hive. They are putting honey in the supers, but they are plugging the brood nest so full of pollen that when they do have a queen laying eggs she'll have to look for places to put them. I am keeping my fingers crossed, hoping that the bees know what they are doing. I certainly don't.

In my "outyard" things are a bit different. On one of the few days when I could get into those hives, they didn't show any signs of swarming. A couple of days later my friend who lives out there and reports developments called with the happy news that they were swarming all over the place. He did that half a dozen times. I have six colonies there and they must have cast an average of three swarms each.

Now here is another for Ripley. It ties in to some extent with my experience here, but not entirely. I looked all through all six of them yesterday, it being a beautiful day for a wonder, and guess what I found. Or what I didn't find. I didn't find any eggs or young brood in a single colony. Either every hive has a virgin, or they have swarmed themselves queenless. They all act queenright, so I am hoping that they have virgins.

Did I hear somebody say "Live and Learn"?

Second Glances

C.M. Isaacson

Price support is no "soft lap" to fall back upon (page 324)—it was purposely designed, so far as the base price goes, to encourage beekeepers to help themselves. The lowering of the support price this year is another step in that direction; to push the industry a little further towards the time when the crutch can be thrown away. But Mr. Killion is too modest (I am assuming that he is the "C.E.K.")—I still say that few can have the success that he has had in comb honey production. It is an art.

The small beekeeper gives service much out of proportion to his holdings (page 329). Both in keeping public interest up in bees and honey, and the pollination value of their bees they contribute much. Mr. Carr's description of methods suitable for the suburban or sideline beekeeper should be capable of successful adaptation in many localities. We do a good deal of nucleus making with two frames of brood or so, but as all colonies are wintered in double stories, we can do it earlier and the "splits" are often left as full colonies when the honey flow begins in late June or July. We use laying queens instead of cells for starting the division. It works well, and if no increase is wanted, enormous colonies could be had by doubling the parent colony and the nucleus.

Reversing brood chambers for swarm prevention does have definite value. A large proportion of colonies so treated once or twice will go through the season without swarm trouble of any serious nature (page 332). Driving the queen into one brood chamber where she is confined with a queen excluder is a good practice where there is no dependable fall honey flow. It is true that there will often be too much brood where there should be honey otherwise. If that empty super Mr. Hogarth mentions was left off at the start of the fall flow, however, he could doubtless eliminate any fall feeding—hives would be stone heavy.

Bigger per colony yields are a partial answer to increasing costs in beekeeping (page 336). Mr. Tontz is right that the labor and certainly the investment in a low producing colony is about equal to those with real yields. It all goes back to the old hope of "making every colony as good as the best". As to honey sweetened jellies and jams, could not some of the fruit darkening be avoided by less boiling and the use of fruit pectins instead? I believe Mrs. Nielsen mentioned this some years ago. That would also help to overcome the characteristic "runniness" of honey products.

A flight of fancy can contain worthwhile thoughts — especially when it comes from Ireland (page 339). There are no "sure-fire" methods in beekeeping. We often believe so, but the bees refuse to believe **us** at times. As to the queen talking — well, it **was** in Ireland.

Changing conditions can radically cut bee pasturage and consequently the crop, as Mr. Cox relates for Idaho beekeeping. We still have considerable waste land in my locality but the weevil is beginning to take its toll of clover stands. Beekeepers must constantly attempt to adopt their operations to changes as they occur (page 340).

Clarification of the honey from big uncapping machines has been a problem since their introduction—one that has been solved at least partially by some beekeepers by using very large capacity heating tanks (pages 342-345). Another drawback, of course, is the high initial cost—and there is no uncapper that I have seen that does not require hand work for depressed capping areas. But the advantages are many, and they doubtless have come to stay for the larger producers who have a volume to justify their purchase.

Honey should be a "natural" in desserts, and Mrs. Nielsen's recipes are "family tested" (the best test of all). But even though I know the final result will doubtless be good, I cannot quite go along with her "sacrilege" in carving out the inside of an angel food cake. I like those big "heavenly light" pieces too well.

(Continued on page 442)

A Talk to Beginners

M. J. Deyell

"To him who has known them and loved them, a summer where there are no bees becomes as sad and as empty as one without flowers or birds." —Maeterlinck.

Swarms

As a rule, we are likely to see what we are looking for. The other day I visited one of my apiaries near Medina. After examining a few hives, I happened to look in the direction in which I entered the apiary, and discovered that I had passed within two feet of a small swarm without noticing it. At this season of the year, when visiting a bee yard, I usually scan the surroundings carefully for swarms. This small swarm was put into a hive, and on my last visit to the yard, I found that the swarm had a laying queen.

A few days later, I visited another yard and upon looking about discovered two swarms on an apple tree, one of them a little above the other, quite near the ground. The two swarms would weigh eight or nine pounds. I shook both of them into a two-story, 10-frame hive. The two queens will have to fight it out to see which will be mother of the united swarm.

About a year ago, I had a call from a lady in Medina, regarding a large swarm on a tree. The accompanying picture shows the swarm quite clearly although the day was dark and it was difficult to get a clear picture. The swarm had come out of a hive in an apiary owned by a neighbor across the line fence. It was quite easily hived and by the time I was ready to shake the bees in front of the hive directly beneath, I had an audience composed of mothers and children in the neighborhood. The swarm must have weighed eight or nine pounds.

You readers may recall my story in the July 1951 Gleanings regarding our hiving an unusually large swarm in June which weighed 14 pounds. That was the largest swarm I have ever seen. We know it weighed 14 pounds because we weighed the hive before putting the bees into it, then again after the bees were all in. I suspect this swarm may have consisted of two swarms that united.

Jack Deyell

Some years ago, in northern Michigan, I hived an unusually large swarm which completely filled a two-bushel basket. I rather think it consisted of two or three swarms that united. Some of them may have had virgin queens. At any rate, it took a three-story 10-frame hive to hold the bees. The swarm was hived on July 1st and remained in the hive until July 3rd, when they took off for a large swamp about three-quarters of a mile away. I grabbed my smoker and veil, also a large wash tub, threw them into my Model T Ford with a truck body, and started after the swarm which flew parallel with a road leading to the woods. It was then and there that I learned approximately how fast a swarm can travel—10 or 12 miles per hour, according to the speedometer of my car. It was at the edge of the woods that I lost sight of one of the largest swarms I have seen.

Scout Bees

The general consensus seems to be that a colony of bees sends out scout bees to look up a location for a swarm, then, when the scouts have found a suitable place, such as a hollow tree, or a space between the sidings of a building, they will, in some way, communicate this information to the swarm which will then fly to the desig-

nated place in order to occupy their new home.

Now, I don't swallow quite all that I read and it is just a little difficult for me to believe this scout theory. However, it seems reasonable to assume that a swarm of bees would have to know their destination, in order to arrive. I have read of people having noticed a few bees around a small hole in their dwelling houses or perhaps a hole leading to a cavity in a tree, then, a little later on, have seen a swarm enter.

If the scout theory is actually true, we would have to credit the bees with something approaching intelligence.

Leaving Supers at the Yards in the Fall

A few years ago, I found myself carrying empty extracting supers from my car, parked at the side of the road, into my apiary some distance away. This was during the fruit bloom and dandelion honey flow. Following a wet spell, it was impossible to drive from the road to the apiary.

If any of you readers have tried carrying supers on a hot day, you will know it is hard work. I made up my mind I would never do that again and since that time, I have been piling my empty supers right in the bee yard, making them mouse and bee-proof. It is necessary to have a good level foundation for the piles of supers. I usually run them about five high, that is, five deep supers, and of course, more shallow supers when they are used. I put a large brick on top of each pile.

Supers Come in Handy

This past spring we had considerable wet weather and it was impossible to drive into some yards. Practically all of the colonies needed supers during the spring flow and it was very convenient to walk over to the pile of supers and get enough to put on.

One must be careful, however, not to leave these supers in the piles too long, during warm weather. The bee moth is likely to get into the combs and destroy them. As a matter of fact, if all of the supers are not needed at the beginning of the honey flow, it is well to put them on colonies on top of inner covers with center blocks left off, so that the bees may circulate among the combs in these supers.

No Two Colonies Exactly Alike

There are certain kinds of work in factories, as for example, an assembly line where a workman performs a certain operation many times a day in identically the same manner. For me, such work would become monotonous.

There is no danger of beekeeping, especially the manipulating of colonies, becoming monotonous because one never knows exactly what he will find when he opens a hive. Each colony is somewhat different from the other. This means that the beekeeper must know what constitutes a normal colony for the different seasons of the year, and must therefore try to supply any deficiencies that may exist. For example, if one finds an old worn-out queen that is likely to be superseded, he should remove her and introduce a young, laying queen of good quality. If the colony is short on stores, food, either combs of honey, sugar syrup or

A big swarm that clustered near the ground so that it could be hived easily. Some swarms are not so accommodating.

dry sugar, should be supplied to make up the deficiency.

If the colony requires comb space for brood rearing and the stores of incoming nectar, it should be given one or more supers. Sometimes one may find that a colony is queenless. If so, a young queen should be introduced. If one sees a young queen, either a virgin or one ready to start laying, it seems preferable to let this queen remain in the colony until she becomes a laying queen, provided, of course, the owner is satisfied that the stock from which the queen is being produced is good.

We Should Try to be Ready for Any Emergency

One never knows for a certainty, until the close of the season, what will happen. Sometimes the main honey flow starts earlier than usual; at other times it may start rather late in the season. In this area, we are not always sure of a honey flow from clovers but we can be reasonably sure of a fall flow from goldenrod and aster.

It pays to be ready for any emergency but it is difficult to meet some emergencies, such as the failure of a honey crop to materialize, or perhaps wind storms or floods that damage bees.

I have had two close calls with tornadoes. One passed a few rods to the west of one yard, flattening a large barn. Not one hive in my apiary was damaged, not even a cover blown off. I put a large brick on each cover and perhaps this helped to keep the covers on.

The other tornado blew over 40 hives and scattered some of the combs, lifting them into the tree tops. After spending about an hour and a half, lifting the hives back into place, the bees went to work and settled down, gathering honey as though nothing had happened. I supposed they would be very disagreeable to handle but apparently they were quieted by the high wind.

Importance of Ample Stores

I have stressed this so often that I hesitate somewhat to mention it again. During July, the beekeeper should look ahead to having an ample amount of stores in his hives for winter food. This is especially true in localities

Jack Deyell holding a comb of sealed brood, the upper portion of which shows empty cells from which young bees have emerged.

where there is a summer flow but practically no fall flow. In this part of Ohio, bees are likely to fill their food chambers during September and October. In some other localities, where there is no fall flow of any consequence, it seems advisable to reserve a full super of honey, commonly called a food chamber, in addition to what honey there may be in the bottom chamber.

By the way, in an earlier talk I mentioned wintering a few colonies in single brood chamber hives. I wanted to compare them with double brood chamber colonies. The single-story colonies had to be fed this spring and at the present time they are not so populous in bees as the double brood chamber colonies. Perhaps I should wait until the close of the season to make a just comparison. It seems to take a long time for beekeepers to learn that ample stores are required to produce populous colonies of bees.

Taking Off Honey

Early in the season there may be a temptation to take honey from hives before it is properly cured or ripened. Such honey, after being extracted, is likely to ferment or sour if kept for any length of time. The moisture content is too high. During a very dry season, combs that are not entirely capped over may be removed from hives for extraction. However, during a normal season, combs should be three-quarters capped over before they are

(Continued on page 446)

Asked & Answered

Prevention of After-swarming

Question: To prevent after-swarms, is it wise to cut out all queen cells except one, to make sure of one queen only? If so, when is the proper time to do this? —J. Snyder, Ohio.

Answer: There are two methods by which after-swarming can be prevented. One is to destroy all but one of the queen cells, as you suggest, and the other is that of robbing the parent colony of most of its bees just before the after swarm would issue. The first method is employed in localities where the main flow is late in reference to the swarming season, so that the parent colony should store surplus the same season. Great care should be taken in order not to overlook any cells, and the one that is left should be the finest and best appearing. The other method is used chiefly in localities where swarming occurs in the midst of the main honey flow, since by this method the field bees left in the parent colony, are transferred to the swarm, the supers being on the newly hived swarm. The parent colony, in this case, is not expected to store surplus the same season. The parent hive is robbed of most of its bees by having the prime swarm in a new hive, located on the old stand, moving the parent hive to one side, then on the seventh day, carefully moving to a new location so that the flying force of bees on returning from the field will enter the new hive. This so depletes the parent colony that it cannot cast an after-swarm, provided this is done at the time when most of the workers are in the field and young bees are taking their first flight as they usually do early in the afternoon.

* * * * *

Uniting Two or More Swarms

Question: Is it advisable to unite two or more swarms as they issue, to secure an extra strong colony?—M. Anderson, Indiana.

Answer: It is sometimes an advantage to unite two or more swarms in order to make extra strong colonies during the honey flow. This is especially true if the main flow comes on just after the swarms have united, as in a clover locality where the swarming season comes during the honey flow. This plan brings good results if the colonies are not as strong as they should be, so that the swarms are not large. However, if the honey flow does not come until a few weeks later, it would not be wise to unite the swarms in this way. Neither is it advisable to do so when the colonies are abundantly strong to begin with, for it is sometimes difficult to induce a great mass of bees to work with proper vigor when crowded into one hive.

* * * * *

Top Supering

Question: Is top supering possible in the production of comb honey or practicable?—A. G. Roden, Illinois.

Answer: The old, so-called orthodox method of placing a fresh super on the bottom of the pile of supers, below filled and partly filled supers, and juggling them around in order to get them properly filled and capped, is rather complicated, to say the least. Top supering is simpler. We find that strong colonies during a good honey flow will occupy supers placed on top as needed. The big advantage in top supering for comb honey is that there are fewer partly-filled sections at the close of the flow than when the old method of supering is used. When supers are placed on top they are occupied if and when needed. It is, of course, necessary to remove supers as soon as the sections are capped over, to avoid travel staining. During a rapid flow, it is necessary to examine supers once a week to see if any need to be removed, also to determine if more are needed. In comb honey production, top supering may not reduce labor to any extent because the filled supers at the bottom of the piles have to be removed p e r i o d i c a l l y and promptly to avoid travel-stained sections. However, in our opinion, top supering does result in better filled and capped sections, fewer partly filled sections, and, believe it or not, less swarming.

Appointment of a State Supervisor of Apiary Inspection in California

Mr. Elbert Jaycox has been appointed California State Supervisor of Apiary Inspection, effective April 13, 1953, filling the vacancy recently created by the resignation of H. M. Krebs to enter private business.

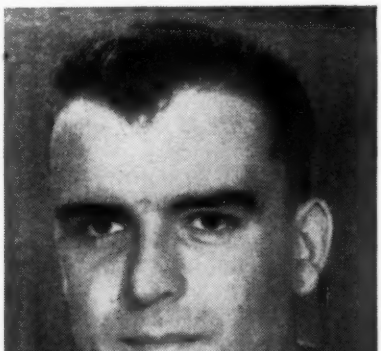
His duties under the new title will be to cooperate and work with the county agricultural commissioners as closely as possible in organizing the inspection work on a considerable basis in their respective counties, having in mind its coordination with that in other counties in the interests of uniformity of action. At the same time he will be available on request to assist in the training of county personnel in apiary inspection and will be on call at all times to assist, if requested, in meeting local regulatory problems.

If Mr. Jaycox is to effectively carry out his responsibilities on a state-wide basis, he will not be able to tie himself down by doing actual inspection work in the various counties. For instance, several requests are currently on file from commissioners asking for immediate assistance in carrying out seasonal inspection of their bees. If these requests were met they would all have to be carried out concurrently to meet the stated urgency, and any one of them would require a minimum of several weeks to complete. Obviously this situation could not possibly be met by one individual.

Apiary inspection is a county responsibility and should be conducted by county personnel or a deputy state bee inspector, thus leaving the State Supervisor free to coordinate the work and furnish technical assistance on a state-wide basis.

Of the one-half million colonies representing holdings in California, nearly half have been diverted to pollination showing an annual rental income of close to $700,000. In addition, the value of the honey, wax, queens and package bees produced represents another three and one-half million dollars.

Mr. Jaycox will work with the commissioners as well as with the beekeepers in every way possible, in the protection of this important industry. However, progress in reducing bee diseases will be dependent upon full cooperation and appropriate action by all concerned. — H. M. Armitage, Chief, Bureau of Entomology, Sacramento, California.



Elbert R. Jaycox

Why the Cell-door is Hinged

By Wayne Keller, Oshkosh, Nebr.

Of little economic importance is such a thing as why the virgin queen doesn't gnaw the capping of her cell all the way around. But observation of small details may result in success where there might have been failure. From my observations there is little doubt that a queen bee turns more than once in her cell. It seems that even the hinge might bear evidence of this by being marked from her cutting before some point in the circle is perforated. After making an initial perforation, she would of course cut from that point. When the circular doorway swings outward, for she pushes as she cuts, she cannot and need not work at it anymore. I believe leaving the hinge is more accidental than deliberate, and surely isn't because of turning only part way around.

Observations on Balled Queens

By V. G. Milum, University of Illinois, Urbana, Ills.

At 3 p.m. March 23, an inspection of one of our observation hives revealed that the queen was being balled, we knew not why. The ball was broken up by dampening the end of a folded strip of paper with carbolic acid and pushing it behind the glass sidewall to a point near the queen. The balling workers rapidly dispersed, but the queen remained with her thorax tightly jammed in a cell. Wiggle as she did, she was unable to extricate herself and we removed the glass and assisted with a firm pull. Was she being balled because of being stuck in the cell or was this an attempt on her majesty's part to escape the balling?

But soon after the release, she was being balled again. Two drops of diluted carbolic acid were dropped into the hive near the ball which rapidly broke up and the bees moved hurriedly to the front corner of the hive where the queen joined them. The next morning at 9 she was surrounded by a circle of royal attendants and the following day she was laying vigorously. Does this suggest another use for carbolic acid? Maybe so.

While there seems to be a general impression that when queens are balled they are actually killed by stinging, I think not. It is more likely that death eventually results from starvation. I have rescued many queens from that fateful ball, but when the last worker is pried away, the queen very often moves away under her own power, possibly lacking a whole or part of a leg or wing. One writer says that bees ball a queen to protect her but of that idea, I am very suspicious.

The best indication of my non-stinging theory is provided by a single experience in removing a queen from a ball in which one of the workers with a leg entrapped between my fingers attempted to sting me but instead jabbed the queen. Almost instantly death followed, as compared to a much slower death when one queen is stung by her rival.

And have you noticed that with mortal combat between queens, the one that is successful is the one that first is able to grab her enemy with her front legs over the top of the head of the other from directly in front? The advantage is that this position aligns the tip of the abdomen and the sting with the region of the junction of the thorax and abdomen where the fatal thrust of the sting is made. The abdomen of the victim and her sting contact only open air.

And perhaps you haven't read that young queens are usually successful in combat over old queens because the fluid in the poison sac of old queens is more or less solidified. If so, then an advantageous position is not the only weapon. The winner must still possess the ability to administer the fatal shot of deadly poison, which after all these years, isn't formic acid any more.

July Swarm Fills Seven Supers

I am a reader of Gleanings and saw the article on bees that "swarmed in July are not worth a fly". A swarm I hived on July 7, 1951, filled seven supers and the combs were nearly all capped over. I have been around bees for 40 years and that was the largest swarm of bees I ever saw. I put a queen excluder under the supers so I know there was no queen up above. —Finn's Apiaries, N. Mankato, Minn.

Just News

On July 18th The **Worcester Beekeepers' Association** will hold its meeting at Parker the Florist, Route 140, West Boylston, Mass. This meeting is unusual and one of the high points in beekeeping for the county. Mr. Parker goes to great effort to present to the beekeeper an historical presentation of methods of keeping bees in actual hives operating and dating from 1850 to the present modern hive. Since Mr. Parker is a florist and grower he is particularly interested in nectar-bearing plants and has many growing on his place. Competitions will consist of identification of plants, drone catching, queen hunting, frame nailing, smoke starting, and nitrous oxide experimentation. Bring your own picnic lunch—coffee will be served. Come at 1:30, rain or shine, and join with us in a beekeepers field day. All beekeepers are welcome.—B. W. Richardson, Sec.

* * * * *

The summer meeting of the **Lake Region Beekeepers' Association** will be held in Morris, Minnesota, in the Agricultural Hall of the West Central School of Agriculture on July 7th at 8:00 P.M.—L. W. Sundberg, Sec.

* * * * *

The **Berks County Beekeepers' Association** will hold its annual picnic and summer meeting on Saturday, August 1, at 2:00 P.M. at the Ontelaunee Orchards ¼ mile south of Leesport, Pa., on route 122. We have a very interesting program planned for everyone. E. J. Anderson and Wm. Clarke will be the speakers. We will have contests and refreshments, especially that good honey flavored ice cream. Come one, come all, and make it a grand success, the meeting will be held rain or shine. — Henry F. Phillips, Sec'y.-Treas.

* * * * *

Just a reminder of the **Beekeepers' Short Course** on August 24 to 28 to be held at Pennsylvania State College. Those wishing to register or have a copy of the program should write A. L. Beam, Director of Short Courses, Dairy Building, State College, Pa.

Summer district meetings of the **Wisconsin State Beekeepers' Association** are to be held at Watertown Public Park Pavilion, Monday, July 20, and Eau Claire Lake Park Pavilion, Tuesday, July 21.

10:00 A.M. - Called to order by the President.
10:15 A.M. - Crop prospect report from beekeepers present.
10:45 A.M. - 11:45 A.M. - Honey House Sanitation by Philip Kremer, Supervisor of Food Inspectors, Dept. of Agriculture, Madison, Wisconsin.
11:45 A.M. - Business Meeting.
12:00 - 1:30 - Lunch Hour—pot luck lunch to be served (bring a dish for each member of your family).
1:30 P.M. - "Know Your Honey" by Prof. V. G. Milum, University of Illinois.
2:00 P.M. - "Honey Promotion in October" by a P.M.A. Official.
2:30 P.M. - Comments from visiting editors and manufacturers present.
3:30 P.M. - Adjournment.

* * * * *

The summer meeting of the **Minnesota and North Dakota Beekeepers' Association** will be held on July 24 and 25 at Detroit Lakes, Minn. A potluck picnic lunch is scheduled for the 24th. A honey scoring contest will be held and all beekeepers attending are asked to bring a sample of honey. The possibility of setting up grades for honey in Minnesota will also be thoroughly discussed.—Robert Banker, Sec.

* * * * *

The annual picnic of the **Southeastern Minnesota Beekeepers' Association** will be held at St. Charles, Minnesota, on July 19th. (tentative date). —Robert Banker, President.

* * * * *

The **Westchester County Beekeepers' Association** will hold its next meeting at 2:30 p.m., Sunday, July 19th, at the home of Mr. and Mrs. E. Stangl, 24 Grand Blvd., Scarsdale, N. Y. Visitors are always welcome.—Carlton E. Slater, Publicity.

* * * * *

The **Virginia Beekeepers Short Course** will be held at George Washington Hotel, Winchester, Virginia, on July 9-11. A cordial invitation to all.

* * * * *

The **Cuyahoga County (Ohio) Beekeepers' Association** will hold its first summer meeting on July 12, at Dr.

Kuttler's place, corner of Rockefeller and Chardon Roads, Wickliffe, Ohio. Meeting begins at 2 P. M. Refreshments served.

* * * * *

The **Regional Middle Tennessee Beekeepers' Association** will meet in Lawrenceburg, Tennessee, August 12. The **East Tennessee Beekeepers' Association** will meet August 21, at 10 a. m., in City Park, Fountain City, Tennessee. Picnic lunch will be served at the noon hour. Out-of-state speakers will be on the program at both meetings. All beekeepers are invited. — W. D. Reams, Sec. East Tennessee Beekeepers' Association.

* * * * *

The annual meeting of the **American Bee Breeders' Association** and the **Southern States Beekeepers' Federation** will be held on Monday and Tuesday, November 2nd and 3rd in Atlanta, Georgia. These dates were set and plans made for a Georgia Honey Show when the host associations (North Georgia Beekeepers' Association and the Georgia State Beekeepers' Association) met in Macon, Georgia, on Sunday March 24th. More details later for the best meeting yet of these associations which will be held in the Peach and Bee State.

* * * * *

Tri-state (Indiana, Michigan, Ohio) Beekeepers' Conference, Angola, Indiana, August 7 and 8, 1953.

Friday, August 7

11:30 a.m.-4:30 p.m.—Pokagon State Park Shelter House, Earl Alexander, Pres. Indiana State Beekeepers Ass'n., presiding.

11:30 a.m.-1:30 p.m.—Picnic lunch

1:30 - 4:30 p.m. — Attendance drawing and awards. Discussion of Indiana conditions—Earl Alexander. The Price Support Program—Representative from Production and Marketing Administration, Washington, D.C. Tips on Rearing Good Queens—Leslie Little, Shelbyville, Tenn. Problems of Commercial Pollination—Ted Gran, Perrysville, Ohio. Meet the Inspector: C. A. Reese, Columbus, Ohio and Leslie Little, Shelbyville, Tenn., interrogators. Gilbert Perigo, Chief Apiary Inspector, State Entomologist's Office, Ind. Don P. Barrett, State Apiarist, Dept. of Ag., Lansing, Mich. S. E. Bailey, Specialist in charge of Apiculture, Dept. of Agriculture, Columbus, Ohio.

7:30 - 9:30 p.m. — Auditorium. Tri-state College, Angola, E. C. Martin, Assistant Professor of Entomology, Mich. State College, presiding.

7:30 - 7:35 p.m. — Attendance drawing and awards. Group singing—led by M. J. Deyell, Editor, Gleanings in Bee Culture, Medina, Ohio. Address of Welcome—Dr. Woods, President, Tri-state College. Response—B. Elwood Montgomery, Associate Prof. of Entomology, Purdue Univ. Two Thousand Years of English Beekeeping—Dr. Eva Crane, Editor, Bee World, Hull, England. Panorama of the South and West; Kodachromes—Chas. A. Reese, Exten. Apiarist, Ohio State University. Pollination of Alfalfa; colored movie furnished by Hercules Powder Co., and shown by Purdue Representatives.

Saturday, August 8

9:00 - 11:30 a.m.—Auditorium, Tri-State College, Howard Schmidt, President, Mich. State Beekeepers' Ass'n., presiding. Discussion of Michigan conditions—Howard Schmidt. Attendance drawing and awards. Problems of Commercial Beekeeping — Oscar Schmidt, Bay City, Michigan. Advice to Beginners—M. J. Deyell, Medina, Ohio. Choosing honey queen for Mich. State Fair. Insecticide Panel: Kill the Bugs and Spare the Bees: Agriculture in Chemical Age—Ray Hutson, Mich. State College. Control of Legume Insects—C. R. Weaver, Ohio Agric. Experiment Station. Protecting our Pollinators — R. T. Everly, Purdue University.

11:35 - 12:15 — State Beekeepers' Ass'n. Meetings.

12:15 - 1:30—Lunch in cafeteria, Tri-state College.

1:30 - 4:30 p.m. — Auditorium, Tri-state College, H. R. Swisher, Pres., Ohio Beekeepers' Ass'n., presiding. Discussion of Ohio conditions—H. R. Swisher. Attendance drawing and awards. Native Bees in the Pollinating Picture—B. Elwood Montgomery, Purdue University. Introduction of Visitors. A Tour of Beekeeping in Modern Europe — Dr. Eva Crane, Hull, England. Crowning of Honey Queen. Awarding of Grand Prize.

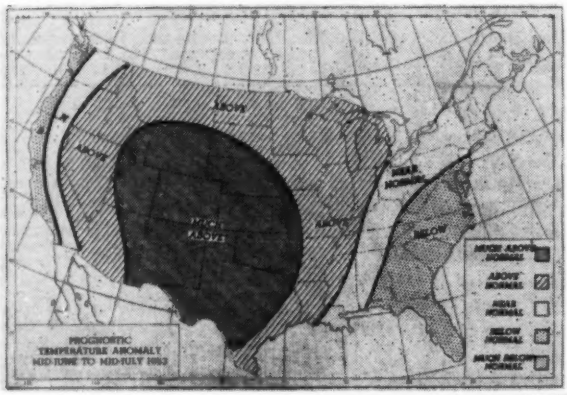
* * * * *

The next regular meeting of the **Middlesex County Beekeepers' Association** is scheduled for July 25th at the apiaries of Wm. Maxant at Harvard, Mass., where among other hives the Club Hive will again be examined. This experiment of moving the Club Hive to each location where the meetings are scheduled make it very easy for members to follow the progress. Mr. Robert Cheney (Professor at M.I.T. and one of our members for many years) has invited all members of this Association to meet with the Maine beekeepers at his York Beach cottage. Look for direction signs at the "Rust Cabins" at York Beach. Bring picnic baskets for noon and eveing meal. Mrs. Cheney will supplement the evening meal with a big pot of New England clam chowder. This trip to Maine is a regular **must** for most of the Middlesex members who enjoy the fine outing and grand hospitality shown by the Cheney family. —John H. Furber, Sec.-Treas.

XUM

Average Monthly Weather Resume and Outlook

U. S. Department of Commerce, Sinclair Weeks, Secretary
Weather Bureau, F. W. Reichelderfer, Chief



Prognostic temperature anomaly Mid-June to Mid-July, 1953

Prognostic precipitation Mid-June to Mid-July, 1953

The above charts for the United States show for the next 30 days, the expected departures from normal temperatures and the expected total precipitation by means of classes.

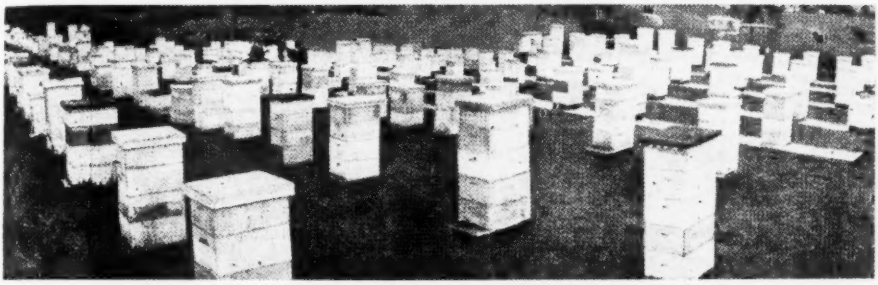
Outlook for Mid-June to Mid-July 1953

The Weather Bureau's 30-day outlook for the period from mid-June to mid-July calls for temperatures to average warmer than seasonal normals over the western two-thirds of the nation except along the West Coast where near to below normal temperatures are indicated. Warmest weather is expected to occur over the Southern Plains and Southwest. Below normal temperatures are predicted over the Middle and South Atlantic States and near normal in areas not specified.

Precipitation is expected to exceed normal in the Middle and South Atlantic States and also in the Far West, but prevailing dry conditions are indicated over much of the Central and Southern Plains and in the Southern Rocky Mountain States. Elsewhere about normal rainfall is anticipated.

CAUTIONARY NOTE: The 30-day Outlook given here is not a specific forecast in the usual meteorological sense, but is an estimate of the average rainfall and temperature for the next 30 days based upon the best indications now available. For more specific predictions subscribers should look to the local forecasts published by the nearest Weather Bureau Office. Daily local forcasts are limited to approximately 36 to 48 hours in advance; more general 5-day forecasts are made twice a week. In any case, it should be kept in mind that nearly always there are changes in the weather every few days, sometimes of a sudden and severe nature.

New Zealand Beekeeper on Top of World



One of Mr. Hillary's apiaries in Auckland, New Zealand.

When word came that a beekeeper, Edmund P. Hillary of Papakura, N. Z., was one of two men who reached the top of Mount Everest on May 29, we immediately sent an airmail letter to Mr. J. McFadzien, editor of "New Zealand Beekeeper" asking him to give us some information concerning Mr. Hillary. We have just received from W. C. Ashcroft, Havelock, North, N. Z., a number of clippings from "The Hawk's Bay Herald-Tribune" concerning "Ed" Hillary's life history thus far.

It seems that Mr. Hillary is not only a skillful mountain climber but also a successful beekeeper, as the accompanying photo indicates. He lived in the small town of Taukan, 38 miles south of Auckland, until he was 13 years of age. His father published the local newspaper. The son decided to become a beekeeper, and with his wife and three children moved to Papakura. His father was at one time president of the National Beekeepers' Association of New Zealand.

Mr. Hillary, now 34 years of age, began mountain climbing in New Zealand at the age of 24, "just for the fun of it". He climbed Aspering and Tasman and his first ascent of Mt. Cook was by the previously unclimbed South Ridge. People marveled at his daring and strength.

In February 1948 Hillary saved the life of Ruth Adams, a young medical student who attempted to climb Mt. Perouse. A rope broke and she fell 200 feet, breaking an arm and suffered shock and concussion. Hillary turned back from his own climb and sent one guide back for aid while he and another climber carried the girl to an ice cave. Food was dropped by plane and in due time a 16-man team climbed to the ice cave and transported the girl down the mountain to safety.

The latest word is that Queen Elizabeth has knighted Edmund Hillary, the beekeeper who reached the top of Mount Everest with Colonel John Hunt, leader of the British Expedition.

Mr. Hillary's father does not think his son's well-earned distinction will change his career. He is one of the best beekeepers in New Zealand and loves his 1000 hives of bees and the out-of-doors life.

Mr. Hillary's exploit has brought much credit to the beekeeping industry throughout the world. Our entire industry owes him a vote of thanks for planting the name of a beekeeping on the top of Mount Everest.

Requeening a Laying Worker Colony

By E. F. Moore, Dept. of Agri., Fredericton, N. B.

In reference to the question of requeening a colony having laying workers I would like to pass on my method which has proven successful in this difficult problem:

Simply provide a new hive body, suspend the caged queen between frames of drawn comb, over this place an escape board, and the hive of laying workers above. The field bees will go down and release the queen and become established in the new hive body. The layers will remain with their brood and must be destroyed. The frames of drone brood from these layers should be divided among strong colonies in the apiary.

American Honey Institute News Notes

By Harriett M. Grace, Director
Commercial State Bank Building Madison 3, Wisconsin

Times change, and change rapidly. And food products change, too. Bread gets refined, whitened, and softened. Milk is pasteurized, homogenized, fortified with vitamins. Butter is quartered, colored, and scored. Meat is graded, packaged, and expertly cut up. Canned goods are processed, sized, and labeled.

But honey? Honey remains the same.

What is the honey of today like as compared with that used by the ancient Greeks? Essentially, it is the same food. Man cannot claim credit for producing honey; that honor belongs to the laborious bee who manufactures his golden honey with that secret formula known only to God and Mother Nature.

But it is man's job to glean the honey and see that it finds its way to the consumer. And the honey that he gathers from the hive, extracts in his honey house, bottles, and markets, is the same honey that adorned the banquet tables of the knights of old.

That the world possesses such a constant, consistent food-stuff as honey makes you stop to think a moment. In this wavy, topsy-turvy world with one new development immediately superimposed on another, honey's agelessness acts as the ballast, the stabilizer of a bounding world. It seems to give some thread of continuity to each era of life.

And we go one step further. If, indeed, honey has not basically changed throughout the years, then honey must be good enough to have stood the test of each new development that man devised to improve his food. No new food could match honey, or else honey would have been erased from modern man's diet and the new, better food substituted for it. But none could touch it. None could better it. **Honey remains King of the Sweet Kingdom.**

Starting 'way back in the days of the ancients, honey has been a treasured food, so valued that it was used as an implement of barter. Although today coined money replaces honey as a bargaining agent, nonetheless it still keeps its place on the homemaker's kitchen shelf, and is used quite often when she wants to serve "something special".

It is this notion that honey is priceless, is "special", is too good for everyday use and should be kept for a special occasion much as a bride keeps her good silver for company meals—it is this notion that we want to wipe out.

We want to make the luxury of honey into a necessity of everyday life. We want the consumption of honey to rise with the standard of living. Sales of automobiles have increased as the working man's pockets started to jingle, until now a car is found in every family, not just the families of the well-to-do. So it should be with honey.

We don't want to bring back the days when honey was so dear it was the measure of a woman's dowry. We want honey to be as common as the proverbial old shoe. We want honey to rank with salt and flour as household staples.

In short, we want quantity consumption of honey. Then, and only then, will honey grow into a full adult industry. We are getting there. Perhaps a good way to put it would be to say that honey is in its adolescence—it has grown out of infancy but not yet reached adulthood. Energetic honey business men, marketing entrepreneurs, and sheer dogged stick-to-itiveness on the part of all beemen, shove honey ahead every day. Using the American Honey Institute as a wedge, honey men are on the verge of forcing open the crack they have made in the wall of customer resistance to lay bare a wide-open honey market.

This summer, let's SELL, for all we're worth, for we have a product that's worth selling!

Our Cover Picture

Our cover picture shows Walter Thomas hard at work in a Root Co. apiary. Mr. Thomas has recently returned from a year's leave of absence in Hawaii, as manager of apiaries owned by Parker Ranch.

Buy and Sell

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate: 15c per counted word, each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in by the 10th of the month preceding publication.

HONEY FOR SALE

WE BUY AND SELL all varieties of honey. Any quantity. Write us for best prices obtainable. The Hubbard Apiaries, Onsted, Michigan.

IOWA Honey, one can or truck loads. Russell D. Smalley, Beaver, Iowa.

CLOVER extracted honey in sixties. Abram Brubaker, Lancaster, Pa., Rt. 1.

CLOVER COMB HONEY—Ready to ship about July 15. Write for prices. C. W. Schrader, Waterville, N. Y.

NORTHERN NEW YORK'S finest white clover comb honey. Forrest Dygert, Hammond, N. Y.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTICE—We can not guarantee honey buyers' financial responsibility, and advise all beekeepers to sell for cash only or on COD terms except where the buyer has thoroughly established his credit with the seller.

CASH for your comb honey and all types extracted. Send sample and best price. Buckeye Honey Co., 3930 No. High St., Columbus 14, Ohio.

CASH for Beeswax. Write as to quantity and we will quote price. Muench-Kreuzer Candle Co., Inc., Syracuse, N. Y.

HONEY WANTED—All grades and varieties. Highest cash prices paid. Mail samples. State quantity. HAMILTON & COMPANY, 2613 South Yates Ave., Los Angeles 22, California.

HONEY WANTED, any amount. If you want more for your honey, sell it to Cloverdale Honey Co., Fredonia, New York.

WRITE FOR shipping tags and quotations on rendered beeswax. We buy from one pound up and if you have over 25 pounds let us work it into foundation for you at a 25 percent saving. Walter T. Kelley Co., Clarkson, Kentucky.

WANTED—Light amber clover, amber, goldenrod, buckwheat. Advise what you have for immediate delivery. Roscoe F. Wixson, Dundee, New York.

CASH PAID for white and amber extracted honey. Send samples and state quantity available. Prairie View Honey Company, 12303 - 12th St., Detroit 6, Mich.

WANTED—Carloads or less of honey and wax. Any grade. Send sample and best cash price. Alexander Company, 819 Reynolds Road, Toledo, Ohio

ALL GRADES HONEY AND WAX WANTED—Mail samples, advise quantity and cash prices delivered to us. HONEY SALES COMPANY, 1808 NO. WASHINGTON AVE., MINNEAPOLIS 11, MINN.

WANTED — Honey all grades. Quote prices and send sample. Write Stoller Honey Farms, Latty, Ohio.

CASH FOR YOUR HONEY—Light extracted or comb. Regular trade send sample. 60-pound cans furnished if desired. W. R. Moomaw, Stone Creek, Ohio.

WANTED — White extracted or comb honey. Send sample. Millersport Honey Co., Millersport, Ohio.

BEESWAX OR HONEY WANTED in trade for supplies or cash. Hodgson Bee Supplies, Ltd., 575 - 13th Ave., New Westminster, B. C., Canada.

WANTED — Pure all bee built comb honey from sea grape, tupelo, and saw palmetto nectars from bee hives or bee trees. S. MacIntyre, Hayter, Alberta.

FOR SALE

WRITE FOR CATALOG — Quality Bee Supplies at factory prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Beekeepers' Supplies and Comb Foundation. Onsted, Michigan.

THE BIGGEST BEE SUPPLY Catalog published (64 pages) free for the asking. Listing many items not found in other Catalogs. No agents—buy direct and save 20%. WALTER T. KELLEY CO., CLARKSON, KENTUCKY.

BEE SUPPLIES—Tin packages; 10 sizes glass jars; paper shipping supplies; window cartons and other items. Roscoe F. Wixson, Dundee, N. Y.

The only comb foundation plant in the east. We sell foundation, work your wax, render combs and cappings. Robinson's Wax Works, R. D. 3, Auburn, N. Y.

FOR SALE — New heart cypress 10-frame bottom boards. K. D., 10 or more, $1.00 each; 50 or more, 90 cents each; 100 or more, 85 cents each. One nailed up sample, postpaid. $1.25. Fred L. Poole, Elizabethtown, Rt. 2, Box 67, No. Car.

SIMPLEX TRAP clips queens without handling, $1.00 postpaid. Instant Frame Spacers — eight-nine, specify size, $1.50 postpaid. Free circulars. George Leys, 36 Jackson St., New Rochelle, N. Y.

HONEY LABELS

Improved designs, embodying color, balance, simplicity, and distinction. Please send for free samples & prices.

C. W. AEPPLER COMPANY

Oconomowoc, Wisconsin

FOR SALE or TRADE
for Honey and Wax

1 6-row Hope Automatic bottling machine, cost $7500, like new	$2500
1 stainless steel Flash heater 80' double tubed compact	500
110-gal. stainless steel tank	150
200-gal. stainless steel Kettle, 100 lbs. pressure, agitator	950
World labeling machine, semi-automatic	125
1 Burt automatic labeling machine	425
1500-gal galvanized tank, insulated	100
8 90-gal. galvanized Kelly tank with copper heating coils (each)	15
8 electric heaters for tanks (each)	50
2 honey melting tanks, holds 33-60's each (each)	15
Platform lift truck, 2000 lbs.	15
1 honey pump, motor and spill tank	35
Several copper kettles, some agitators, size 100-150 gals. (each)	100-200

SPRINGBLOOM INC.
3522 W. Linden Pl.
Milwaukee 8, Wisconsin

QUEENS

Italians or Caucasians

This is your chance to get some of the best queens on the market at such a low price. Young mated and live arrival guaranteed. Clipped, marked and air mailed at your request.

Prices:

1-25 lots 75c
25-50 lots 65c
100 up 60c

FARRIS HOMAN
Shannon, Miss.

HONEY WANTED

Carloads and less than carloads. Mail sample and best prices in all grades.

C. W. AEPPLER COMPANY
Oconomowoc, Wisconsin

QUEENBEE PAINTING OUTFIT, $1.50; postpaid. Southwick Apiaries, Waban, Massachusetts.

60 2-story 10-frame colonies bees. Willis H. Freeman, Ft. Covington, N. Y.

FOR SALE—One Junior Brand melter and Senior melter. One 8000-pound storage tank. Neiss filter and small extractor. Ralph Woods, Battle Lake, Minn.

FOR SALE—600 used 60-pound honey cans, washed and dried, no rust. D. F. Treap, R. D. 3, Kent, Ohio.

FOR SALE: Four-frame power extractor. Stainless steel honey tank, 500 gallons, also smaller tanks. 10-frame hives and comb honey supers. Walter A. Doud, Mansfield, Pa.

FOR SALE—350 colonies bees. Good hives, regularly inspected. Well established field and orchard pollinizing business. Good honey locations. Write for full information. John Peterson, Garfield, Wash.

FOR SALE—Two honey tanks, 150 gallons each, 1 only, honey tank 140 gallon capacity. Tank prices $35.00 each, honey gate included. 1 only, 10¼ inch foundation mill, $45.00; 1 four-frame honey extractor, 36 inch diameter tank. Price $50.00. All equipment is in very good condition. E. Kocsis, 25188 Telegraph Rd., Flat Rock, Michigan.

Potdevin label paster, $75.00; 16 sheet Cellulo Filter with bump pump, $895.00; National semi-automatic labeler, $545.00; one ton mixing tank with reduction gear box, $150.00; Flash heater, $70.00. Alexander Company, 819 Reynolds Rd., Toledo, Ohio.

BEES AND QUEENS FOR SALE

We use all possible care in accepting advertisements but we cannot be held responsible in case disease occurs among bees sold, or if dissatisfaction occurs. We suggest that prospective buyers ask for certificate of inspection as a matter of precaution.

THREE BANDED Italian bees and queens, extra good workers and gentle to work with. 2-lb. with queen, $3.00; 3-lb. with queen, $4.00. Select queens, 1 to 25, $1.00, 25 up 90c each. Alamance Bee Company, Graham, N. C., Phone 4703.

CAUCASIAN bees and queens. They are extra good workers and very gentle. 2-lb. with queen, $3.00; 3-lb. with queen, $4.00. Select queens, 1 to 25, $1.00; 25 up, 90c each. Satisfaction guaranteed. Black River Apiaries, Rt. 1, Currie, N. C.

GOLDEN ITALIAN bees and queens, very gentle and very yellow, 2-lb. with queen, $3.00; 3-lb. with queen, $4.00. Select queens, 1 to 25, $1.00; 25 up, 90c each. Carolina Bee Farm, Graham, N. C., Phone 7731.

CAUCASIAN Bees and Queens, 2-lb. pkg., $2.75; 3-lb. pkg., $3.50. Queens 75c each; 100, $65.00. Lewis & Tillery Bee Co., Greenville, Ala.

YANCEY HUSTLERS—Three-band Italians. They get the honey. Queens balance of season, $1.00; $10.00 dozen. Caney Valley Apiaries, 2500 Nichols, Bay City, Texas.

NORTHLAND ITALIAN QUEENS—For production. $1.00 each; 10 up 90c. Shirl Baker, Rodney, Michigan.

HONEYLINE QUEENS—Large beautiful Italians, $2.00 each. STEPHENS APIARIES, Wingate, Indiana.

TWENTY YEARS OF SELECTION. Jersey bred queens for larger crops. Queens, $1.00 each. Milton Stricker, R. D., Annandale, New Jersey.

CAUCASIAN queens, young large laying, personally raised. Balance of season, $1.00 each. Fred Brock, Mc Donald, Tenn.

YELLOW ITALIAN bees and queens. Real producers. Health certificate, satisfaction guaranteed. 3-lbs. with queen, $4.50; queens, airmail postpaid, $1.00; 20 to 50, 90c; 50 to 100, 85c. O. E. Brown, Rt. 1, Asheboro, North Carolina.

SEEDS

HONEY PLANTS: Seeds—Trees—Plants. Illustrated catalog on request. Pellett Gardens, Atlantic, Iowa.

MISCELLANEOUS

SECTION COMB HONEY production procedure steps, 50c. Glossary of Beekeeping Terms, 50c. United Industries, Box 449, Madison 1, Wisc.

Bargain in new or used honey Cans or Root supplies for cash or honey. Buckeye Honey Company, 3930 N. High St., Columbus 14, Ohio.

WANTED

WANTED—Several new or used electric planes for uncapping. L. E. Hicks, 3930 N. High St., Columbus 14, Ohio.

WANTED — Partner or buyer for bee business in Central Calif. 300 colonies, with permanent locations for 1000 or more colonies. Extracting equipment, loading machine, mountain cabin, etc. Crops available, sage, orange, cotton and mountain honey. Also pollination rentals. Delightful climate. Hunting, mountain and deep sea fishing available. A good place for one who likes beekeeping as a way of life. Write Box 753, Gleanings, Medina, O.

HELP WANTED

WANTED — Young men interested in learning bee supply business. Openings in shipping, sheet metal, and printing departments. The A. I. Root Co., Medina, O.

HELP WANTED — Beeman to finish 1953 season. Address Box 412, Milford, Mich.

EXTRACTORS FOR SALE

EXTRACTOR—Root 20-frame radial in good condition. Sacrifice for $95.00. Jack Edney, 4165 S. Highland Ave., Norfolk 2, Virginia.

MAGAZINES

THE BEE WORLD, international and scientific journal on bees and beekeeping, with apiculture abstracts. Monthly, including membership in the Bee Research Association, $3.00 per annum, including apicultural abstracts. Dr. Eva Crane, Director, 55 Newland Park, Hull, Yorks, Eng.

Know interesting facts concerning the bees of India through the INDIAN BEE JOURNAL, published in English by the Bhupen Apiaries (Himalayas), Ramgarrh Dist. Naini Tal, U. P., India, or available through them. Subs. Rs7/ or 10 shillings or 2.25 dollars per annum. Single copy, Rs ¼s. 1/9 or 40 cents (International Money Order). Payment in mint postage stamp of your country accepted.

ATOMIC POWER?
FLYING SAUCERS?
NO! !
HYBRID QUEENS

Under contract we have taken over the equipment and breeding of Kelley's Island 4-way Hybrid queens. No other breeder can offer you these bees. They are known as "Island Hybrids".

Look over your queen needs and place your order for replacements early for immediate or future delivery.

Many favorable reports have been received on this bee.

Prices June 1st to Oct. 15th

	Hybrid Stock	Rossman Stock
1-25	$1.25 ea.	$1.00 ea.
26 or more	1.15 ea.	.90 ea.

"They Produce"

Rossman Apiaries
P. O. Box 133 Moultrie, Ga.

YOUR BEST INSURANCE

FOR A BETTER HONEY CROP in 1954 is to requeen now with Ladylike Caucasian queens. They get results for others; they will make a better crop for you if properly handled.

Prompt shipment. Circular free.

LADYLIKE CAUCASIAN QUEENS

1-11	$1.10 each
12-24	1.00 each
25-50	.90 each
50 or more	.75 each

CAUCASIAN APIARIES
Castleberry, Ala.

"GULF BREEZE"
Italian Queens
PRICES:
1-24 ..... 80c ea.
25 and up 75c ea. Airmailed
BESSONET BEE CO.
Donaldsonville, La.

Peace is for the strong . . .
Buy U. S. Defense Bonds regularly!

HOLLOPETER'S QUEENS

Reared in the North of Northern stock full of vim, vigor, and vitality. This strain of three band Italians has stood the test of beekeepers everywhere for over forty years.

— Prices — Untested queens		
1-9	$1.00	each
10-24	.90	"
25-49	.80	"
50-99	.75	"
100-up	.70	"

White Pine Bee Farms
Rockton, Pa.

Read the South African Bee Journal. Published every two months. Subscription 7/6 per year to the Treasurer, P. O. Box 3306, Cape Town, South Africa.

DO YOU FIND it difficult to secure information about sheep and sheep ranching methods? The SHEEP AND GOAT RAISER reaches more sheepmen with more information on range sheep than any other magazine published. Subscription $1.00. Hotel Cactus, San Angelo, Texas.

ITALIAN QUEENS
$1.00 each
Pure mating guaranteed
W. E. PLANT
Hattiesburg, Mississippi

FOR TOP QUALITY AND SERVICE—SEND US YOUR ORDERS

We offer Two Quality Strains:
DADANT'S STARLINE HYBRID QUEENS
GARON'S THREE-BANDED ITALIAN QUEENS

PRICES:

Italians	1-24	$ .95	Starlines	1-24	$1.20
	25-99	.85		25-99	1.15
	100-up	.75		100-up	1.00

Reg. U. S. Pat. Off.

Queens Air Mailed, Clipped and Painted, if desired at no extra charges.

GARON BEE COMPANY — DONALDSONVILLE, LA.

ITALIAN

Queens	Queens
Nice large laying queens (each)	$ .55
2-lb. pkg.	2.60
3-lb. pkg.	3.50

MITCHELL'S APIARIES
Bunkie, La.

ITALIAN
PACKAGE BEES AND QUEENS
for 1 9 5 3
Write for Prices
GIRARDEAU APIARIES
Tifton, Ga.

Booking orders now. Over 30 years a shipper. Send for Free Circulars.

BLUE BONNET APIARIES
Weslaco, Texas

SECOND GLANCES

(Continued on page 427)

The will to survive is strong in some individual colonies, as Propolis Pete found out with his one that shouldn't have lived by all reasonable standards (page 348). A vigorous colony very low on stores often is vicious in temperament, Pete. I agree with you—give them a chance. I might add, though, that my colonies that "shouldn't live" — the probables, as it were, seldom disappoint me. They don't (live).

Double brood chamber comb honey production has been much discussed of late. It should be a good way to get a fair amount of comb produced and on the market. Strong colonies with good queens only should be used. It is worth trying in any locality with a main flow of consequence (page 350).

Gleanings' new type face should draw much favorable comment. It is a big improvement to an already fine magazine. May it continue on its steadily improving course of service to beekeepers everywhere.

The most revolutionary improvment in the hive since Langstroth—

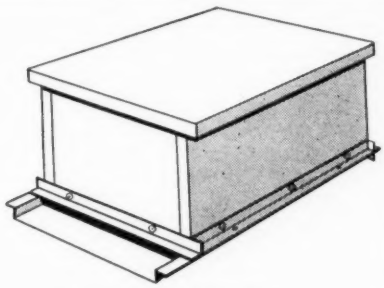
The "UNI-TEMP" ALUMINUM HIVE

- Cooler in summer
- Warmer in winter
- Exceptionally long life
- Light weight
- Rust free, rot free
- Never needs painting
- Accurately bee-spaced

(Patent application in preparation.)

Ask for our Free Catalog

The A. H. HALE CO.



Hapeville, Georgia

DR. CRANE VISITS OUR CONTINENT

(Continued from page 415)

meeting to be announced.
Aug. 30 Sept. 1-3 C/O R. B. Willson, Inc., 250 Park Ave., New York 17, N. Y.

This tour of our country has been undertaken with the collaboration of Mr. James I. Hambleton of the U. S. Department of Agriculture in the enthusiastic belief that Dr. Crane will contribute much to our industry by coming to America and that such a visit will make her still more valuable to beekeeping. It is to be regretted that time does not permit of a more extended trip but we hope she will soon return to visit many other places on this side of the Atlantic.

THE HONEY INDUSTRY

(Continued from page 408)

MEMBER something like this:

"Please sign and return this pledge, and fulfill it at your earliest convenience, so that our industry may grow to the stature that it justly deserves:

" 'I pledge that I will subscribe to the American Honey Institute ( ) percent of gross receipts.

"Signed, Bemis J. Honeywell, Beekeeper.' "

And then follow it up—"Mr. Beekeeper: May we have your signed pledge? It is for **your** benefit."

Who knows? We might get so big that the Federal Trade Commission would investigate us for violating the Sherman Anti-Trust Law.

Greater gains have sprung from lesser beginnings than this!

THRIFTY QUEENS

Three-banded Italians only

Lots of 100 ..... $55.00
Smaller lots, each ..... .65

REMEMBER — Thrifty Bees are guaranteed to please.

W. J. FOREHAND & SONS

Fort Deposit, Ala.

Breeders Since 1892

SELECTED ITALIAN QUEENS
any number 75c

CAUCASIANS
90c

All queens shipped Air Mail and guaranteed to please. From June 1st to Nov. 1st.

Walter D. Leverette Apiaries

P.O. Box 364 Fort Pierce, Fla.

BRITISH BEE JOURNAL
The Only WEEKLY Bee Journal in the World
Subscription $3.00 per annum payable in advance.
Keep up to Date in Beekeeping by taking out a subscription now through our agents:

Gleanings in Bee Culture
Medina, Ohio

Kelley Has a Sub-Post Office at His New Plant

Our shipping clerk stands to the left of the mail truck driver with part of the day's parcel post shipment. The top of the mail truck, which is in the loading dock pit, can just be seen above the cartons. We use 2 and 4 wheel trucks to move our shipments to and from the dock and gladly lend these to the mail truck driver to speed and ease his work.

Clarkson is a small town of about 400 and it has a third class post office, that is, the volume of business handled last year was less than $8,000.00.

When our busy season started in March (this was our first shipping season here) we flooded the Clarkson post office out because they did not have the facilities to handle our large volume of parcel post. The postmaster decided that our mailing facilities were far more commodious and convenient to use than those provided by the Government so we applied for a sub-post office and secured it.

For years we have owned and used the latest style equipment in our office and shipping room because we must zone, weight, and stamp our packages as must all big users of the mails. Now the postmaster comes to our plant and sorts and bags our packages and soon thereafter the mail truck backs into our loading docks and the day's shipments are on their way.

Parcel post is usually the cheapest way to ship small orders weighing up to 75 pounds and even more and it is always the quickest routing. Most packages are delivered right to your door, even on R.F.D. routes. From our Clarkson post office we can ship packages weighing up to 70 pounds to any United States Post Office which is one of the many advantages of living near a small town.

Try us on your rush orders. Send your orders in by air mail and you will be pleasantly surprised at how quickly you receive your goods by regular parcel post.

THE WALTER T. KELLEY CO., Clarkson, Ky.

GOOD QUEENS? We have them. Three-Banded Italians only. Tops in production and gentleness. The choice of leading beekeepers for more than 30 years. Requeen now for good wintering and maximum production next year.
$1.00 each 10, $9.00 25, $20.00 100, $80.00
Prompt shipment. Postpaid. No disease.
H. C. SHORT, Fitzpatrick, Ala.

BETTER BRED QUEENS — THREE-BANDED ITALIANS
65c ea. Air mail — Use them for replacing failing queens, also requeening for swarm control, etc. You can't buy any better queens at any price. — 65c ea. Air mail
CALVERT APIARIES — Calvert, Alabama

BEE LINES TO THE EDITOR

(Continued from page 388)

ing around we spotted several, very slow because of the cold, but busy gathering the last bit of fresh pollen available,—from a witch-hazel bush. These, as you know, bloom very late in the fall for next year's seeds.

"Several years ago I noticed my bees bringing in a red pollen very early in the spring. I finally traced it to a kind of maple tree that grows along the river bottoms here. I don't know the name of it, but the wood is very white and soft and the leaves rather small and deeply serrated. The buds burst very early: they are open today, March 8, and will break into bloom as soon as we have three or four warm days. They are in full bloom with the crocuses.

"In my experience, bees will gather pollen readily in the late fall and the early spring when it is too cold to think of nectar, and they don't seem to care if it is from Pamelas pet-potted posies or a skunk cabbage, as long as it is fresh".—C. D. C.

ITALIAN
Package Bees and Queens
Jackson Apiaries
Box 58 Funston, Ga.

HARPER'S FAMOUS QUEENS
by airmail
75c each
10 or more, 65c each
CARLUS T. HARPER
New Brockton, Ala.

HONEY WANTED
Cut Comb and Extracted
Advise what you have
T. W. BURLESON & SON
WAXAHACHIE, TEXAS

York's Quality Bred Queens

Two Strains

Queens Bred Up to a Quality, Not Down to a Price

Reg. U. S. Pat. Off.

York's Italians		Dadant Starlines	
1-24	$1.00	1-24	$1.35
24-99	.90	24-99	1.25
100-up	.80	100-up	1.15

The Preference of Leading Honey Producers

York Bee Company, Jesup, Georgia U.S.A.

(The Universal Apiaries)

CAUCASIANS
CARNIOLANS

Hardy prolific, rapid build-up best of workers. Caucasians have the longest tongue of any race. Both races build beautiful white combs. BOTH ARE THE GENTLEST OF ALL RACES OF BEES. Gentleness is safest in towns, near neighbors, or near streets or highways. Gentleness saves time, sweat, patience, and work. Discount on quantity orders. A few Caucasian Breeding Queens. Ask.

Prices, Both Races:

Untested Queens ..... $1.00 each
Tested Queens ..... 1.75 each
By Air Mail

Albert G. Hann
Glen Gardner, New Jersey

Package Bees for 1953

Truck loads a specialty
Nuclei made to order
Italian Queens

Eugene Walker

Live Oak, Calif.

THE AUSTRALASIAN BEEKEEPER
The senior beekeeping journal of the Southern Hemisphere provides a complete cover of all beekeeping topics in one of the world's largest honey producing countries. Published monthly by Pender Bros. Pty. Ltd., Box 20, P. O., Maitland, 3N, N. S. W., Australia. Subscription by Bank Draft or International M. O. 18/- (approx. $2.15) per year, post free. Sample copy free on request.

A TALK TO BEGINNERS

(Continued from page 430)

removed. If they are entirely capped, all the better.

In areas where AFB is prevalent it is well to examine the brood chambers of colonies to see that they are free from disease before removing surplus honey.

Many beginner and side-line beekeepers use a bee escape for removing bees from supers. This is a handy piece of equipment because one can place the escape in the opening at the center of the inner cover, then place the super to be removed, on top of the inner cover. When this is done in the forenoon, the supers should be ready to come off the following evening. It is well to examine the super over the bee escape to see that no small openings are present. If even a small one is left, the bees may enter the super and steal the honey, especially during a dearth of nectar.

Avoid Robbing and Stinging

One should be careful at the end of the honey flow to keep combs of honey under cover and away from the bees. If they start robbing, they are likely to make trouble for the owner. Be sure to keep the honey house door closed and windows properly screened at all times but especially when honey is being extracted.

Package Bees & Queens
Quality & Service
C. F. KOEHNEN & SONS
Glenn, California

QUEENS QUEENS QUEENS

"Italians"

We offer you young laying queens, shipped prepaid, airmail. Mark colonies with old and failing queens and replace when conditions are favorable. Queens available until November 1st. Clipped and painted at no extra cost.

1-9	**.75 ea.**
10-up	**70 ea.**
Tested Queens	**$1.50 ea.**

Quality Does Not Cost — It Pays

The Wilbanks Apiaries Claxton, Georgia

ITALIAN QUEENS — PACKAGE BEES

Packages With Young Laying Queen At the Following Prices:

	1-9	10-99	100-up
2 lb.	$3.25	$3.00	$2.75
3 lb.	4.25	4.00	3.75
4 lb.	5.25	5.00	4.75

After July 1, Queens $1.00 each—Starline Hybrids $1.25

Reg. U.S. Pat. Off.

We guarantee safe arrival, a health certificate with each shipment, and prompt service.

Our Queens are reared under my own personal supervision, our aim is QUALITY NOT QUANTITY.

LITTLE'S APIARIES P. O. Box 122 Shelbyville, Tennessee

J E N S E N Says—

Good queens are not produced by accident consistently, but are the result of well directed effort and persistence. Commercial Queen Rearing is a highly scientific and painstaking occupation and art. And few there are who really master it. To produce thousands of High Quality Queens every month through the spring and summer seasons requires a lot of know-how and work.

The conscientious queen-breeder sells more than just queens. From him you expect and get service "beyond the call of duty." To quote a Rotary Motto, "Service is our Business." Either strain will do you a good job of storing honey, and will be a joy to work with.

"MAGNOLIA STATE" Italian Queens

1-24	$1.25
25-99	1.15
100-up	1.00

Clipped and Marked on Request only

DADANT IMPROVED STOCK "Starline" Hybrid Queens Jensen reared

— PRICES —

1-24	$1.50
25-99	1.40
100-up	1.25

Clipped and Marked Free

Reg. U. S. Pat. Off.

JENSEN'S APIARIES MACON, MISSISSIPPI U. S. A.

QUEENS By Return Mail 60c

2-lb. package with queen	$2.50
3-lb. package with queen	3.00
Tested Queens	1.00

—BRIGHT 3-BANDED ITALIAN—

NOW READY. The past 32 years the foundation of our business has been to furnish you the best bright 3-banded Italians that money could buy. Prompt service, full weight, safe arrival, health certificate, and satisfaction.

Package bees are shipped express F.O.B. If wanted shipped parcel post, the postage will be sent C.O.D.

NORMAN BROS. APIARIES
Ramer, Ala.

Personally Reared

Caucasian Queens

$1.00 each

Large lots 90c each

Howard Weaver

Navasota, Texas

Look for this Sign
When you Want
QUALITY AT LOW COST

Trade Mk. Reg.
U. S. Pat. Off.

KELLEY — "The Bee Man"

QUEENS

KELLEY ISLAND queens by the thousand are available now. If you are in a rush count on us for quick shipment by return air mail.

1-24 ..... 75c by prepaid air mail

25-up ..... 65c by prepaid air mail

THE WALTER T. KELLEY CO., Clarkson, Ky.

Peace is for the strong . . .
Buy U. S. Defense Bonds regularly!

Index to Display Advertisers

Aeppler Co., C. W. 440
American Bee Journal 391
Australasian Beekeeper 446
Australian Bee Journal 391
Bemis Bros. Bag Co. 390
Bessonet Bee Co. 441
Blue Bonnet Apiaries 442
British Bee Journal 443
Bryant & Sawyer 386
Burleson & Son, T. W. 445
Calvert Apiaries 445
Canadian Bee Journal 386
Caucasian Apiaries 441
Chrysler & Son, W. A. 387
Dadant & Sons ..... Inside front cover
Forehand & Sons, W. J. 443
Garon Bee Co. 442
Girardeau Apiaries 442
Hale Co., The A. H. 443
Hann, Albert G. 446
Harper, Carlus T. 445
Hazel-Atlas Glass Co. Inside back cover
Homan, Farris 440
Hubbard Apiaries 387
Hutchison Mfg. Co. 391
Jackson Apiaries 445
Jensen's Apiaries 447
Jepson, H. H. 387
Kelley Co., Walter D. 444, 448
Koehnen & Sons, C. F. 446
Leverette Apiaries, Walter D. 443
Lincoln Surplus Sales 388
Little's Apiaries 447
Lotz Co., August 386
McCord Mfg. Co. 391
Marshfield Mfg. Co. 389
Merrill Bee Co. 392
Miller & Co., Woodrow 387
Mitchell's Apiaries 442
Modern Beekeeping 391
Muth Co., The Fred W. 388
New Zealand Beekeeper 387
Norman Bros. Apiaries 447
Plant, W. E. 442
Prairie View Honey Co. 391
Root Co., The A. I. 390, Outside back cover
Root Co. of Indianapolis 386
Root Co. of Syracuse, A. I. 386
Rossman Apiaries 441
Short, H. C. 445
Springbloom, Inc. 440
Stoller Honey Farms 388
Stover Apiaries 392
Walker, Eugene 446
Weaver, Howard 447
Westley, Roy 388
White Pine Bee Farms 442
Wilbanks Apiaries 447
Williams Bros. Mfg. Co. 387
Wirth, E. D. 391
Woodman Co., A. G. 388
Yates, A. W. 386
York Bee Co. 446

Gleanings in Bee Culture

CONTENTS

August, 1953

Established 1873 Vol. 81, No. 8

Honey Report 453
How We Increased Our Honey Sales — S. K. Hampton 457
Let's Talk Sales — Charles W. Gouget ..... 458 - 460
Honey Wine and Vinegar — Roger A. Morse 461
Melting Honey for Repacking — G. F. Townsend and A. Adie ..... 462 - 463
One of Ohio's Pioneer Beekeepers — R. L. Livermore 463
The Heather Honey Harvest — Geo. W. Green, M.B.E. ..... 464 - 467
Does It Pay to Rear One's Own Queens? — E. S. Miller 467
Where to Keep Bees in New York State — A. C. Gould and Walter Barth ..... 468 - 469
At Last, Bees, Yellow Jackets, and Wasps Can Be Easily Exterminated — Richard L. Post 470 - 471
Honey Processing — Huber A. Seabright ..... 472 - 473
Start Practicing Now — Mrs. Benj. Nielsen 474
Live and Learn — Propolis Pete 475
Second Glances — C. M. Isaacson 476
Bee Facts 477
A Talk to Beginners — M. J. Deyell ..... 478 - 479
Editorials ..... 480 - 482
From North, East, West and South ..... 483 - 491
They Didn't Kill Her — Arthur White 492
Hiving Swarms — Clarence C. Wilson 493
Carbolic Acid Can Cause Trouble — Roger A. Morse 493
Alfalfa Pollination in Kansas — Dr. R. L. Parker 493
Tricks in Rendering Beeswax 494
Short Cuts in Requeening — S. C. Squires 494
Post-Mortem on Package Bees — E. C. Martin 495
It's Been a Long Time — J. W. Admire 496
Disaster Strikes Sioux Honey Association Plant 496
Average Monthly Weather Resume and Outlook — U. S. Department of Commerce 497
Asked and Answered ..... 498 - 499
Just News ..... 500 - 501
First National Honey Show 502
American Honey Institute News Notes 503

Subscription Rates: United States, Canada, Pan American countries, and Spain, one year, $2.00; two years for $3.50; three years for $5.00. Single copy, 20c. Other countries, 50c per year additional for postage. Discontinuance: Subscription stopped on expiration. No subscriber will be run into debt by us for this journal. Change of Address: Give your old address as well as the new and write the name to which the journal has heretofore been addressed. Remittance should be sent by post office money order, bank draft, express money order, or check. Contributions to Gleanings columns solicited; stamps should be enclosed to insure return of manuscript to author if not printed. Advertising Rates: Advertising rates and conditions will be sent on request. Results from advertising in this journal are remarkably satisfactory. Advertisers' Reliability: While the publishers do not guarantee advertisements in this journal, they use utmost diligence to establish in advance the reliability of every advertiser using space in this journal.

Entered as second class matter at Post Office at Medina, Ohio. Published monthly. Opinions expressed by the writers in these columns are not necessarily the opinions of the editors.

The A. I. Root Company, Publishers, Medina, Ohio

M. J. Deyell, Editor; M. W. Hobart and Walter Barth, Assistant Editors
H. H. Root, Associate Editor

The Perfect Combination

Root

BEE SUPPLIES
and
SERVICE
from
SYRACUSE

Before placing your order, be sure you have our latest catalog and price lists. Your request on a postal card will bring them to you.

Root Bee Supplies to help you produce the most honey.

Honey Containers to market your honey attractively.

Modern equipment for rendering your beeswax at reasonable prices.

We pay the highest market prices for rendered beeswax — cash or trade. We will send shipping tags — just ask for them.

A. I. Root Co. of Syracuse
1112-14 Erie Blvd., East
Syracuse 3, N. Y.

For Shipping Package Bees
use
CORTLAND BRAND
Apiary Wire Cloth

For Building or Repairing Frames
use
CORTLAND BRAND
Foundation Wire

Your Bee Supply Wholesaler Sells Them!

WICKWIRE BROTHERS, INC.
Cortland, N. Y.

Western Beeswax Headquarters

Certified Beeswax Salvage Plant
Custom Rendering
Bleaching and Refining
Foundation Manufacturing
both plain and wired.

Top Cash Market for Your Beeswax

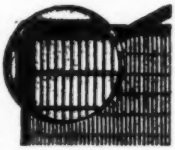
Woodrow Miller & Co.
Colton, Calif. Phone 1722

INDIANA BEEKEEPERS

We are now getting orders for our fine bees and queens. Why not order some today? Prompt shipment on Root Quality Bee Supplies. Wired Foundation. Free Parking.

A. I. Root Co. of Indianapolis
121 N. Alabama St., Li. 2732
Indianapolis 4, Indiana

Chrysler's Electric Welded All-Steel Queen Excluder



The only worthwhile Queen Excluder on the market

- Allows maximum bee passage
- Better ventilation
- More honey production
- No wood. No Burr combs
- No sharp edges to injure bees
- So durably made that it is permanently queen excluding and will last a lifetime.

We manufacture a full line of Bee Supplies. Order from our dealers or direct from our factory. Canadian-made goods are cheaper. No duty. Send for our price list.

W. A. Chrysler & Son
Chatham - Ontario - Canada

FRAME GRIP SEND NOW!

This light modern tool is for easy handling and removal of frames from the bee hive. Orders promptly filled—Satisfaction guaranteed!

$3.00 plus 30c postage fee

McCord Manufacturing Co.
Rt. 2 Box 866
San Jose, Calif.

BEES AND QUEENS

Everything for the Beekeeper.

Telephone: Hartford 5-5546

Michigan Beekeepers:

Visit our modern Honey Packing Plant
Ask for Al Tennenhouse

We carry a complete Line of

ROOT QUALITY Bee Supplies

5-pound jars (Frosted Shoulders)

60-pound cans—Large Handles 3½-inch openings

Prompt Mail Order Service

Free Parking for Cash & Carry Customers

Prairie View Honey Co.
12303 - 12th St., Detroit 6, Mich.
Cash Paid for Honey & Beeswax

The MASTER
(formerly Macy)

Electric Uncapping Knife with thermostat and exposed adjusting screw. Rubber cord. Crucible steel blade.

Price $14.25

HUTCHISON MFG. CO., 2008 S. Sepulveda Blvd., Los Angeles 25, Calif.

STOLLER'S

Frame Spacers

The finest thing ever offered beekeepers. See your dealer, or write

STOLLER HONEY FARMS
Latty, Ohio

At Your Service —
with a complete line of
Root's Bee Supplies & Containers
LEON A. WINEGAR
2100 La Velle Rd., Flint 4, Mich.

The New Zealand Beekeeper
The Quarterly Magazine of the National Beekeepers' Association of New Zealand. Better Beekeeping—Better Marketing. Subscription, 8 shillings per year, payable to
THE GENERAL SECRETARY
Box 19 Foxton, New Zealand

Peace is for the strong . . .
Buy U. S. Defense Bonds regularly!

OLDEST BEE JOURNAL IN THE ENGLISH LANGUAGE

Keep up on markets, practices, scientific data, regulations, and plant possibilities.

1 year, $2.00, U. S. and Canada
Foreign postage, 50c a year extra

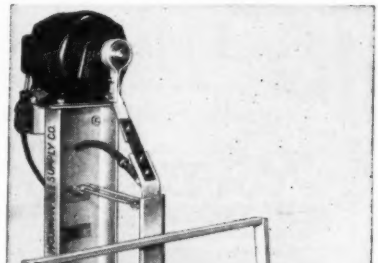
AMERICAN BEE JOURNAL
Hamilton, Illinois

DO YOU KNOW

AG's New Vertical, Vibrating, Steam Heated Uncapper, speeds the work 10 to 25% faster than other methods?

Combs of honey picked out of supers are swung over onto the Vibrating Knife, eliminating all unnecessary handling. The second side is uncapped by merely rolling the comb over, resting top or bottom bar on the frame rest. Send for special circular.

A. G. WOODMAN CO.
Grand Rapids 4, Michigan U.S.A.



LET US TAKE CARE OF YOUR CONTAINER NEEDS
5% discount on $ 50.00 orders
10% discount on 100.00 orders

GLASS JARS

	Queenline	Economy	Sh. Wt.
5 lb. Jars, per reshipping carton of 6		$ .62	10 lbs.
2 lb. Jars, per reshipping carton of 12	$ .80	.68	11 lbs.
1 lb. Jars, per reshipping carton of 24	1.20	1.00	11 lbs.
½ lb. Jars, per reshipping carton of 24	.95	.92	9 lbs.
2½ lb. Square Jars for chunk honey, carton of 12		1.10	12 lbs.

Sample mailing bottle — 15c each ..... $1.20 per doz.

TIN CONTAINERS
Friction Top Pails with Bails

	Price	Sh. Wt.
5 lb. — Per Carton of 50 — 13c each	$ 6.00	27 lbs.
5 lb. — Per Carton of 100 — 13c each	11.65	46 lbs.
10 lb. — Per Carton of 50 — 18c each	8.75	44 lbs.
60 lb. Square Cans, in bulk, each	.62	3 lbs.
60 lb. Square Cans, per carton of 24	14.80	72 lbs.

Write for Label Samples
Cellophane Window Front Cartons for All Sizes
Per 100 — $2.35, wt. 6 lbs. Per 500 — $10.95, wt. 25 lbs. Per 1000 — $21.50, wt. 50 lbs.
Decorated Cellophane Wrappers for All Sizes
Per 100 — $1.30 Per 500 — $6.30 Per 1000 — $12.55

AUGUST LOTZ COMPANY BOYD, WISCONSIN
Manufacturers & Jobbers Bee Supplies

Honey Containers

Tin
Glass
Paper

Write for price list.

A. H. Rusch & Son Co.
Reedsville, Wis.

HONEY WANTED
Bryant & Sawyer
2425 Hunter St., Los Angeles 21

BRITISH BEE JOURNAL
The Only WEEKLY Bee Journal in the World
Subscription $3.00 per annum payable in advance.
Keep up to Date in Beekeeping by taking out a subscription now through our agents:

Gleanings in Bee Culture
Medina, Ohio

Monthly Honey Report

July 21, 1953

The following figures represent an expression of current prices from beekeepers and honey packers over the country. They are based on several reports from each state averaged with the reports in the region. Where insufficient information is returned, prices have been omitted from the chart. Where three figures appear on the chart the first figure represents the low, the middle figure represents the average, and the third figure the high price in cents per pound. Where only two figures are used the low and high are shown.

	North & South Atlantic	South Central	North Central	Mid-West	West
Bulk Honey:					
Table Grade			11½ 12c	11-11¾-12½c	11 12c
Industrial Grade			9½ 10c	9½-10-11½c	
Price to Grocers:					
5 lb. jar - can	14-21-26c	13-20-24c	14-18-21c	14-16-18c	18-19½-22c
3 lb. jar - 12's		20-22-25			
2 lb. jar - 12's		20-24-27		21-22-25	
1 lb. jar - 24's	20-26-30	23-25-29	22 32	21-24-25	
Comb Honey:					
Cs. of 24 Sec.	7.20-8.40-10				
Retail Price:					
60 lb. can	14-20-30		15-17½-22	15-18-25	14-17-20
5 lb. jar	16-27-45	20-25-30	19½-23-25	18-21-23	23-24-25
3 lb. jar	32-36-41	27-30-33⅓	28 30		
2 lb. jar	27½ 47	30-32-35	27½ 32	20-26½-30	29 31
1 lb. jar	29-36-50	30-34-37	29-32-37	26-31-35	
Honey Sales:	Fair	Fair	Fair	Fair	Fair
Estimated Crop:					
Condition based on normal %	77	80	52	87	98

A few comments were as follows:

"Crop failure this year. Too dry."—Vermont.

"Honey sales rather slow in these parts when fruit is plentiful."—New Jersey.

"Good crop from holly."—Arkansas.

"Too hot, too cold, too dry. Colonies strong. With alfalfa in full bloom, and weather conditions favorable, we should have a good flow."—Nebraska.

"Excessive heat and dryness cut clover crop very much."—Missouri.

"Lots of clover bloom but not much nectar in it."—Minnesota.

"Clovers about over. Bees have built up well but some are short of stores. Rains have been spotty. Looks like a short crop for this part of Kansas."—Kansas.

"Prospect for a crop is lessening as the drought is getting more severe. No surplus honey in sight."—Colorado.

"Weather cleared after wettest spring in 20 years."—Oregon.

In general, prices remain about the same as last month. So far crop over the country looks light. Calif. orange and sage already a failure. Despite one cent lower government support price this year it looks as if honey will sell at increased prices this season because of the short crop, particularly in California.

Peace is for the strong . . .
Buy U. S. Defense Bonds regularly!

PROFITABLE NUTRITIOUS SANITARY

Comb Honey Produced in Our Sections

THE DEMAND IS GOOD NEVER A SURPLUS

We manufacture all the items needed to produce comb honey profitably.

Marshfield Manufacturing Company (Inc.)

Marshfield Wisconsin

See our catalog for prices on large quantities.

the Hubbard APIARIES

WANTED: Honey and Beeswax

Write for Free Catalog

Quality Bee Supplies **Factory Prices**
Prompt Shipment from Stock **Satisfaction Guaranteed**

THE HUBBARD APIARIES

Manufacturers of Bee Supplies and Comb Foundation
Onsted, Michigan

H. H. JEPSON CO. — 46 Lincoln St., Boston, Mass.
Supplying N. E. Beekeepers with A. I. Root products for 50 years.
Boston Stock — Root Prices

AW SHUCKS!

Why fuss around with paper or leaves. Just touch a match to a "JiffyLite" and your smoker is lit. Send a dollar for 50 on trial. Your money back if you don't need them.

E. D. Wirth **Pine Neck Road** **Southold, N. Y.**

Apiculture Supplies

Sensible Prices Since 1886

Write for 1953 Catalogue

WILLIAMS BROS. MFG. CO.
5205 S. E. 82nd Avenue
Portland 66, Oregon

We work your beeswax and purchase all grades of honey.

We pay you the best prices for quality honey and beeswax.

Send for our new 1953 Catalog

The Fred W. Muth Co.

229 Walnut St., Cincinnati 2, O.

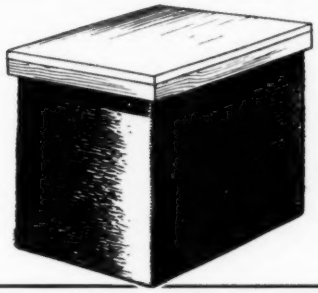
PINKING SHEARS

Only $1.95 postpaid. Chromium plated, precision made. Manufacturer's Christmas overstock. Guaranteed $7.95 value or money refunded. Order by mail. Lincoln Surplus Sales, 539 Main St., Evanston 36, Illinois.

"The Australian Bee Journal"
Published by the Victorian Apiarists' Association at the beginning of each month.
Subscription 10/-per annum plus 2/6 postage to oversea countries.
Address 112 Whitehorse Rd. Ringwood, Victoria, Australia

Winter-Protect Your Bees With Bemis **Winter-Warm** Hive Covers!

Bemis WINTER-WARM HIVE COVERS fit snugly over hives and guard against killing wind and cold. Double-weight, weatherproof, waterproof, durable. Put on or remove in seconds . . . no nailing or tacking.



Economical . . . cost per hive about same as retail price of pound of honey. Three sizes: One Hive, Two Hives, Modified Dadant.

If your dealer doesn't have Bemis WINTER-WARM HIVE COVERS, write to

On Sunny Days . . . Users report that, while Bemis WINTER-WARM HIVE COVERS keep out cold winds, they admit and retain warmth on sunny Winter days so that the bees will take the exercise that keeps them in good health and activity.

BEMIS BRO. BAG CO.
111 N. Fourth St., Box 48, St. Louis 2, Mo.

Mail Order Prices

We have available the following bee supplies which our inspectors have not passed as first line quality — these are the same as our pre-war mail order brand — slight defects in the material make these great savings possible for you.

These are Offered as "Mail Order Grade"

C 2	Full Depth Supers, 10-frame, empty, 5's, 45 lbs.	$ 8.30 per carton
C13	Shallow Supers, empty, 5's, 28 lbs.	5.20 per carton
D 2	Beeway Supers, empty, 5's, 22 lbs.	4.25 per carton
B 2	Metal Covers with Inner Covers, 5's, 51 lbs.	11.10 per carton
G 6	Standard Frames in 100's only, long top, 45 lbs.	9.95 per carton
G16	Standard Frames in 100's only, 2-piece bottom, 45 lbs.	9.95 per carton
G22	Shallow Frames in 100's only, long thin top, 25 lbs.	7.25 per carton
G26	Shallow Frames in 100's only, long thick tops, 38 lbs.	8.95 per carton
H3B	50 Sheets Imperfect "Wire-Ply", 8 x 16¾", 9 lbs.	6.95 per carton

Prices F. O. B. Medina, Ohio

Available From Medina Only

Net Cash with ORDER — No Discounts

We reserve the right to return your cash if our stock is exhausted when your order is received.

The A. I. Root Company, Medina, Ohio

Give us a buzz about Continental Honey Cans

CONTACT THE NEAREST DISTRIBUTOR

PHOENIX, ARIZONA
Quick Seed & Feed Co.
Superior Honey Co.

ALAMEDA, CALIF.
Boyden-Hansen Co.

ALHAMBRA, CALIF.
B-Z-B Honey Co.

COLTON, CALIF.
Sioux Honey Assn.

FOWLER, CALIF.
Central Valley Beekeepers Club

FRESNO, CALIF.
Miner Products Co.

LOS ANGELES, CALIF.
Bryant & Sawyer
Diamond Match Co.
Hamilton & Co.
Superior Honey Co.

OAKLAND, CALIF.
Coles Pure Honey Co.

SAN BERNARDINO, CALIF.
W. D. Miles
860 "F" Street

SAN DIEGO, CALIF.
George B. Wright

SAN FRANCISCO, CALIF.
General Can Co.

DELTA, COLO.
Grover E. Turner

DENVER, COLO.
Cronkhite-Bosanko Supply Co.
Superior Honey Co.

GREELEY, COLO.
L. R. Rice & Sons

MONTE VISTA, COLO.
John Haefeli

WENDALL, IDAHO
R. D. Bradshaw & Sons

CHICAGO, ILL.
R. Freund & Company

HAMILTON, ILL.
Dadant & Sons, Inc.

COUNCIL BLUFFS, IOWA
The A. I. Root Company

McGREGOR, IOWA
John Harnack & Sons

SIOUX CITY, IOWA
Sioux Honey Assn.

GRAND RAPIDS, MICH.
A. G. Woodman & Co.

ONSTED, MICH.
L. M. Hubbard Apiaries

MINNEAPOLIS, MINN.
Mondeng Mfg. Co.

MOORHEAD, MINN.
Northwestern Supply Co.

WINONA, MINN.
Robb Bros.

MANHATTAN, MONT.
Cloverdale Apiaries

OMAHA, NEBRASKA
S. Riekes & Sons, Inc.

ALBANY, NEW YORK
G. B. Lewis Company

GROTON, NEW YORK
Finger Lakes Honey
Prod. Coop. Inc.

SYRACUSE, NEW YORK
The A. I. Root Company

FARGO, NO. DAKOTA
Magill & Co.

CHILLICOTHE, OHIO
G. B. Lewis Company

MEDINO, OHIO
The A. I. Root Company

TOLEDO, OHIO
Alexander Company

NEWELL, SO. DAKOTA
Oscar H. Clark, M.D.

PARIS, TEXAS
Dadant & Sons

SAN ANTONIO, TEXAS
The A. I. Root Company

SALT LAKE CITY, UTAH
Miller Honey Co

LYNCHBURG, VIRGINIA
G. B. Lewis Co.

PUYALLUP, WASH.
Oscar Geiger
805 17th Avenue, S.W.

WATERTOWN, WISC.
G. B. Lewis Co.

POWELL, WYO.
A. D. Hardy

Continental Can Company, Inc.

Gleanings in Bee Culture

Created to help beekeepers succeed

Miss Maxine Laurence, honey demonstrator in the grocery department of the Z.C.M.I. department store in Salt Lake City, is giving samples of honey to customers who were attracted to the counter. Displays such as this one has helped to stimulate the use of honey in their tea room as well as the grocery, bakery, and health food departments.

How We Increased Our Honey Sales

By S. K. Hampton, Salt Lake City, Utah

AS A HONEY salesman for several beekeepers in Utah, I quickly became aware of the value of window displays and free samples of honey, as well as newspaper releases and other promotional means. These and other types of media have increased my honey sales as much as 30 percent. This is especially true in the fall and during "Honey for Breakfast Week".

If only "Honey for Breakfast Week" could be a year-round proposition, there wouldn't be any surplus to worry about. Folks would become "honey-minded" and develop a taste for it just as they already have for jellies and jams.

We of the "Beehive State" have done a lot to stimulate the sale of our honey, particularly to tourists who visit our region. About 75 percent of the cafes, restaurants, and hotels serve honey for breakfast and dinner, and we find this an ideal way to introduce our products to those who have never

(Continued on page 508)

Let's Talk Sales

What is Sales Promotion?

By Charles W. Gouget, Glen Ellyn, Illinois

SINCE MARKETING is affected by mistakes as well as by successes, slip-shod methods cannot contribute to effective sales promotion. Sales promotion begins in the apiary with the appearance that it presents to the public, neat, tidy, and clean, and ends with a satisfied customer. It includes all activities that tend to make selling more effective such as: mail campaigns, window displays, display stands, customer samples, keeping accurate sales records, and even the method used in extracting the honey.

A store window display poorly arranged may "drive" customers away from a store instead of luring them into it. Likewise, a dark, "muddy" honey in an unattractive jar will attract only unfavorable attention on the grocer's shelf, if it attracts any at all. In the same manner a beautiful package with a sticky top may lose a sale, or a jar containing an unfortunate dead bee or some spare parts, therefrom, may ruin untold sales and even an established business. Bad news travels. Obviously, these harmful practices due to faulty techniques are the converse of sales promotion.

Sales Promotion at the Point of Purchase

Many types of sales promotion can be used at the point of purchase, namely: window displays, counter displays, floor displays, and wall displays. Among those listed, window displays are preferred by most grocers because, if they are well done, they lure people into the store and consequently sell more goods. Given a clean, orderly, attractive display in a store window, the number of sales will vary directly as the increase and decrease in pedestrian traffic in front of the window. Almost anything can be sold on a busy thoroughfare.

Any window display to be of much value, however, must not only sell the public, but it must also sell the storekeeper and the clerks as well. The storekeeper must be convinced that the display will increase his business, and the clerks must be interested enough to want to know something about the article they are going to sell. The job of educating the clerks is an important one. To accomplish these ends the display must be so attractive that it cannot help but command the attention of passing shoppers. Unusual design and animated exhibits that develop points of interest will help a great deal toward holding attention and influencing buying. The observer should be impressed with quality at all points in the display, and he should be reminded, if possible, of forgotten needs and of items which are hard to resist buying, such as attractive candies or cakes. These "hard to resist" items should be so arranged that the most attractive exhibit leaves the observer at the door of the store. If he gets that far he will probably enter the store. Once in the store he will usually buy the thing that pulled him in, if he is sufficiently reminded of the fact on the inside.

Sales Promotion from Floor Stands

Floor stands, attractively arranged, should be coordinated with good window displays. They should be placed in positions where the customers literally "trip" over them as reminders of what they saw in the window. Floor stands sell more goods because it is easier to get than on the shelves, and also because more senses such as sight, taste, and feeling can be made use of in the sale. People like to look at what they buy at close range, and perhaps handle it in order to convince themselves that they need it. For this reason dispensing displays that dispense something to eat, such as honey on crackers, will often "clinch" a sale with a wavering customer because the thing in the "flesh" is always more convincing than a picture, chart, or diagram.

Sales Promotion from the Counter

Perhaps the last opportunity that a grocer has to make an additional sale is at the counter. This additional sale may result from an attractive counter display; by the casual mention of an item by an alert clerk, or by a real

Good fo
This wil

sales t
and hea
To real
salesma
tions in
him by
know t
advanta
other a
type. I
persona
the arti
sales.
sell ten
who use
actually
The
who sel

Good food displays in a conspicuous corner of the food store encourages rapid turnover. This will please the management of the food store, making it easier for the beekeeper to get repeat sales in that outlet.

sales talk on the merits, advantages, and health qualities of the article sold. To really "sell" an article, however, a salesman must be able to answer questions intelligently that may be put to him by interested customers. He must know the articles' advantages and disadvantages, and how it compares with other articles or brands of the same type. If possible, he should have a personal interest in the article or use of the article in order to make the most sales. A "honey eater" salesman will sell ten times as much honey as one who uses it only for colds, or one who actually dislikes it.

The big problem of the producer who sells to the grocer, therefore, is to find as many grocers as he can who are really honey eaters. Given the proper coaching and information such a grocer will sell more honey than all of the ordinary stores combined because the grocer is really interested in honey for health reasons, and so he will try to "sell" some of his ideas to his customers.

Sales Promotion by Samples

Samples involve the idea of getting something for nothing, and in most cases this fact is literally true since each sample put up in a small bottle costs the producer at least five cents or more. Samples do increase good will and they will increase sales provided, of course, that the sample is of the

best quality, and the amount given is not too small. Stingy samples may even hinder sales by not providing enough material for a normal taste or trial on some favored combination as pancakes or waffles.

The results obtained by the use of samples depends largely on the way the sample is used by the grocer. It is probably unwise, and surely costly to give samples of a specialized food, such as honey, to all customers because many people do not like honey, in which case the sample may be wasted. Samples given out by the grocer "where they will do the most good" will probably accomplish the best results. Those who like honey are almost sure to buy if they like the sample. Since almost all children like honey, samples given to them will often cause parents to buy. Combination packages containing a sample in connection with a favored food may cause a customer to experience a taste combination that he might not select of his own choosing. Such a combination could be made with prepared pancake and waffle mixes on the grocer's shelves. Combination packages of honey products themselves, such as a honey and honey spread combination, may help to introduce a new item, and to produce new tastes and greater demand. A little experimentation by the producer in cooperation with the grocer will determine if or where samples can be used to the best advantage, and whether or not the extra outlay is worth the additional return.

Sales Promotion by Mail

SALES PROMOTION by mail is costly, but it has many advantages: It can cover a wide area, and reach many more people than a store will in less time. It can select its customer audience and emphasize the particular item necessary to make the sale without the distraction of other influences always found in a store. It commands individual attention, but the advertising must be well done if attention is to be held long enough to get the message across to the customer.

Since most people will not spend time enough to read a long, involved story, regardless of how interesting it may be, an advertising message must be short, concise, and to the point, otherwise it will be filed in the waste basket. In order to hold the reader until he can develop some momentum on the subject matter something must attract his attention at the outset. The word "free" printed in black, boldfaced type is usually a good "catch word" for a title to a short, concise message. Most everyone likes to get something for nothing, and because of this innate desire almost everyone will read an entire advertisement to find out what is going to be given away. Other types of appeal can be used almost equally as well in some communities, such as an appeal to personal health or the health of the customer's children. Cartoons on the subject, if well done, will often put the potential customer in a humorous frame of mind and make him more susceptible to suggestion in the advertising message. It should be remembered, however, that the factors that are necessary to create sales in one item or in one community may not apply to another item or to another community. Each producer has a special problem that applies to his own situation.

Summary

SALES PROMOTION applies to all factors which help in any way to increase sales. It may include factors often considered unimportant by the average beekeeper, as for example: the beekeeper's personality, his personal appearance, the method of extracting the honey, and even the location and appearance of the apiary.

There are many devices designed to increase sales at the point of purchase, but the most important include window displays, display stands, counter displays, and samples. The efficiency of these devices depends largely upon their location, and how well they are done. Every exhibit must have a professional appearance, clean, neat and attractive, and it must always emphasize quality in the product. Slip-shod attempts will do more harm than good.

The photograph used on page 459 was one of hundreds of displays over the country as a result of United States government promotional campaign last fall to increase the consumption of honey. A similar campaign is now under way to culminate in the Honey Week, Oct. 26 to 31.

Honey Wine and Vinegar

By Roger A. Morse, Assistant in Apiculture, Cornell University, Ithaca, N. Y.

History

HONEY WINE has a history nearly as old as man. Keeping bees provided man with a sweetening agent as well as a material with which to make a beverage. Betts (1932) suggests that as nearly as can be determined, the origin of honey wine may date to as much as 25,000 years ago. A drinking horn which contained pollen grains was found buried under many feet of sediment in Germany. Betts interprets this as meaning that the horn was once used to hold some type of honey drink.

Funk and Wagnalls' dictionary (1930) states that the ancient Teutons, who lived on the Elbe and first appeared in about 200 B. C., made a mead or methegalin. The higher orders of this civilization drank honey wine for the first 30 days after marriage. Our word "honeymoon" is based upon this practice and from the Teutons comes the expression "to spend the honeymoon."

The height of the use of honey in wine came in England around 1200 A. D. "Mead," as it was known then, was a national drink; in fact, the maker of the mead held a rank in the King's court which was above that of the court's physician.

Digby (1669) published many formulas which were popular in England from 1200-1600 A. D. Many of Digby's formulas prescribed boiling a honey-water mixture and removing any material which rose to the top. Spices were added to give flavor, and when the material had cooled, the yeast was added. Among other flavoring substances that might be mentioned are strawberry leaves, violet leaves, sorrel, balme leaves, hearts-tongue, thyme, and sage. Some of the other names for honey wine which might be known to the readers are hydromel and oenomel, which were made in early Greece, medu made in the Slavic countries, meth from Germany, mid from Ireland, and hydromel, nectar, and zythus made in France.

While honey wine was popular in Europe, most Americans preferred to make honey vinegar. Many references

Roger A. Morse

may be found in the bee journals from 1870 to date concerning methods and procedures. Some of these methods were not scientifically accurate but seemed to result in good products.

The Present Industry

HONEY WINE is now being produced commercially in the United States, England, Costa Rica, France, and Belgium. In England, wines such as those known in past centuries are being produced. They are listed as meads, methegalins, pyments, cisers, and melomels. An account of these ancient drinks as well as the history and romance of mead is given by Gayre (1948).

In England, more than 400,000 bottles of mead were produced in 1948, most of which was for export to the United States. Production figures in England during recent years are not available. In Costa Rica, 20,000 bottles were produced in 1951 and the producer expects to ferment twice that amount this year. Plans are also being made to export some of this honey wine to this country.

In France most of the honey wine (hydromel) is made for private use.

(continued on page 491)

Melting Honey for Repacking

By G. F. Townsend and A. Adie
Department of Apiculture, Ontario Agricultural College

IN THESE days of changing consumer demand it is not possible to pack honey in anticipation of the requirements for various container sizes. Honey is therefore frequently stored in bulk containers and liquefied at some later date for repacking.

The application of heat is the only method by which honey may be reduced from the granulated to the liquid state. Considerable care must be exercised, however, in liquefying honey, since too long an exposure at high temperatures will injure it. The melting cabinet described below provides a safe and practical method of liquefying honey stored in bulk containers. The honey is permitted to escape from the chamber as soon as it becomes soft enough to flow, thus avoiding overheating. This honey will still contain a large number of granules and must be heated further to completely liquefy it. A double-jacketed tank equipped with an agitator is quite satisfactory for this purpose. The remelted honey may now be handled the same as freshly extracted honey.

Construction of Melting Cabinet

The cabinet is constructed of several plywood panels assembled with screw nails. One quarter-inch plywood sheeting is glued and nailed to both sides of a 1 "x 2" frame. The space between the two sheets may be filled with rock wool to provide additional insulation. Panel dimensions are as follows:

Top and bottom panels	74½"	x 20"
End panels	40"	x 20"
Back and door panels	77"	x 40"

The door is hinged at the top and may be designed to operate with a counterbalance.

The back of the cabinet is lined with sheet metal and the lower 2-inch edge is bent forward to carry the drip into a drain pan which completely covers the bottom. The drain pan is sloped toward the outlet end. The whole cabinet is supported on a metal stand in such a position that honey drains from the outlet directly into a double-jacketed tank.

Cans of honey are supported by two lengths of 1¼-inch pipe. Sufficient tilt is provided to completely drain the cans. To prevent large cores of solid honey from escaping from the cans and plugging the outlet in the drain pan, a 1-inch mesh electrically welded screen is held in position across the open ends of the cans. This screen is supported by two lengths of ¾-inch pipe which run across the back of the cabinet.

The heating unit consists of a 1000-watt electric fan heater. Air from the bottom of the cabinet is drawn up

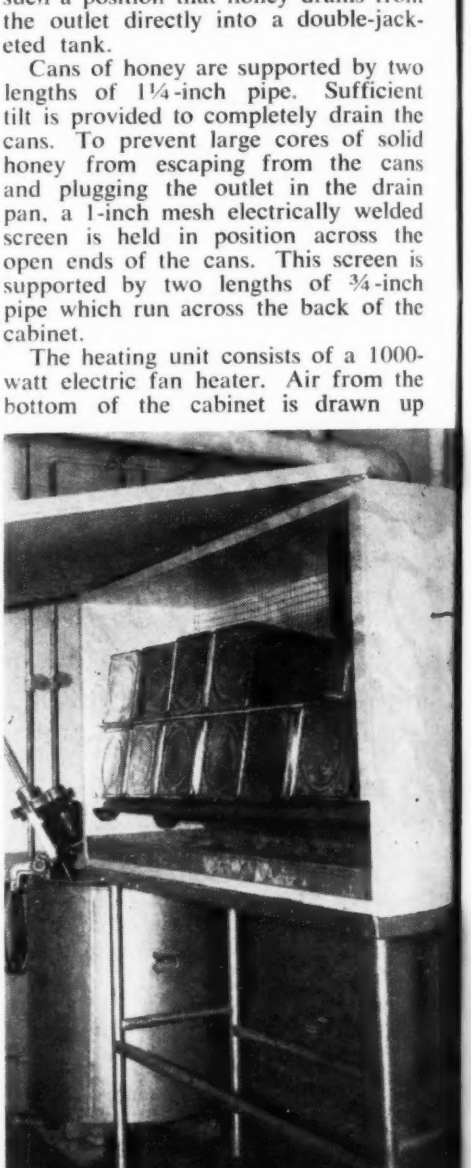


Fig. 1. Melting cabinet ready for operation with double-jacketed tank in position under the honey outlet. —Photo courtesy Dept. of Public Relations, Ont. Agr. College, Guelph, Ontario.

through a 2-inch baffle and re-circulated through the heater across the top of the chamber. No outside air inlet should be provided. As shown in the accompanying photograph, there is plenty of space for air circulation when the melting cabinet is loaded with honey cans. The heating unit is at the opposite end to the honey outlet.

Operation

Place the cans in position on the rack, close the door, and turn on the heater. A check may be kept on the temperature by inserting a thermometer through one wall of the cabinet. The temperature will gradually rise until the honey begins to melt, but will not rise much above 135° F. until the bulk of the honey has drained away. After this the temperature will increase rapidly to around 200° F. Honey escaping from the outlet will be at a temperature of about 100° F.

Although the cabinet may be operated satisfactorily without a thermostat, the temperature may be conveniently controlled through the installation of a warm air limit control such as is used in a hot air furnace. The upper temperature limit could be set at about 170° F. and the lower limit at 130°F. This would prevent any possibility of the cabinet overheating.

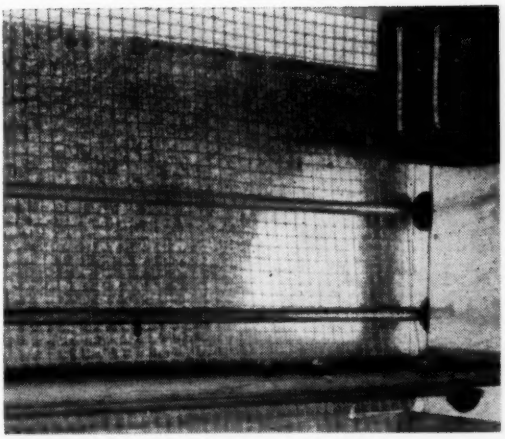


Fig. 2. Inside of melting cabinet showing heating unit with baffle, screen and supporting pipes for honey cans.—Photo courtesy Dept. of Public Relations, Ont. Agr. Col.

Ten 70-pound cans of granulated honey at an initial temperature of 60° F., placed in a melting cabinet in a heated room, will take approximately 12 hours to completely drain into the tank. This operation can very conveniently be carried out overnight. If a different capacity is desired the heating unit and cabinet size should be changed in proportion.

One of Ohio's Pioneer Beekeepers

By R. L. Livermore, Belle Center, Ohio

JOHN DIEBEL of Lorain, Ohio, got his start in beekeeping on a seven-acre farm that he inherited in Hicksville, Ohio, back in 1913. In May of that year he bought a three-frame nuc, and being a good honey season it built up fast enough to harvest a surplus.

Mr. Diebel sold his comb honey to neighbors after producing more than he needed—this encouraged him to produce comb honey on a large scale. So in 1914 he purchased four more hives for the sole production of comb honey.

Swarming was no problem because John Diebel kept increasing until he got about 100 colonies, all kept in one apiary. The abundant acreage of white sweet clover probably accounted for the success of so large a number of colonies in one location.

In the years that followed Mr. Diebel built up his apiaries so that in 1938 he had 336 hives in one location. In that year he harvested 900 cases of comb honey and 18 tons of honey. Since then the crops have been lean, and John Diebel has turned entirely to extracted honey. Today he still keeps a few bees and practices good beekeeping—he is truly one of Ohio's pioneer beekeepers.

Author's heather stance in small paddock on Marginal Farm. Heather (about ten square miles of it) starts some 70 to 100 yards in the background. Hives shown are a special double-walled migratory hive taking standard brood chambers and frames, etc.

The Heather Honey Harvest

By Geo. W. Green, M.B.E.,
Chairman B.B.K.A. Honey Marketing Committee, Leeds, England

WHERE THIS harvest is taken—and it is virtually confined to a small part of northwest Europe—it probably excites more comment than any other. This is partly due to the fact that all conditions connected with it are generally adverse or unusual.

Heather exists only in the bleaker wind-swept parts of northwest Europe, usually at a fairly high altitude, and the period of flowering, and more particularly of the nectar flow, in mid-August, usually synchronizes with one of the recognized co'd periods of the year known as Buchans cold spells. Moreover the bees are normally on the down slope of the annual rhythmic cycle of development, and in no fit condition for the efficient foraging which is profitable to beekeepers.

In spite of all these drawbacks it is, however, the most reliable nectar flow of the year from a special point of view in the northern part of England. The special view point is that the bees generally gather sufficient nectar from this flow to ensure their winter's keep whether they provide a surplus for their owner or not. What is more, it is their habit to start their heather honey storage in the brood chamber usually ignoring the supers until such times as the brood chamber is about three-quarters filled with it. It were as though they knew that in good beekeeping the brood chamber is sacrosanct, and that the nectar flow from the heather is the last of the year.

The surpluses for taking vary considerably, and within my own experience from nothing to 200 pounds. It is, however, doubtful if the over-all average taking one year with another is as much as 20 pounds.

Foraging for heather nectar has a disastrous effect on a colony of bees. The strong colony finishes up no larger than a good sized nucleus. The bees in it are, moreover, all old because one effect of the heather nectar flow is to stop the queen from laying.

These reactions are not fully understood, but to my mind are wrapped up in the facts that, (a) the nectar flow takes place when the colony would be declining in strength in any case; (b) without a shadow of doubt the bees forage with greater intensity of purpose than at any other flow; (c) the high viscosity and other characteristics of heather honey and nectar coupled with the generally cool nights of the August moorland make it difficult for the bees to move nectar and honey out

of the brood chambers and into the supers, and so out of the queen's way; (d) the queen tends to be neglected both on account of the diminishing number of young bees and the serious preoccupation of the workers with foraging activities.

Good management concerned with the heather nectar flow naturally takes into account these factors, and much can be gleaned from it which can be used with advantage in non-heather districts.

For instance, when the heather flow is the principle one for the beekeeper he artificially swarms in the early part of the season or allows this to occur naturally, or by forcing. The result is that at heather time the two halves of the over-wintered colony, i. e., the swarm headed by the old queen and the other by a young queen either reared by the parent colony or introduced, are reaching or have just reached their peak instead of being on the down grade. They can then either be united or used as separate colonies at the heather and united afterwards, or otherwise dealt with as suggested below.

In my view, artificial swarming and then uniting after the heather is one of the simplest and most profitable methods of beekeeping there is because each wintered colony produces a double surplus in addition to a spare brood chamber three parts filled with honey, and each colony goes into winter headed by a young queen and with appreciable stores.

IN PREPARATION for the flow the brood chamber is reduced in size down to eight combs so as to force more honey into the supers. Where the use of queen excluders forms part of normal management these are abandoned for the heather as the queen normally stops laying there, and there is no risk of brood in supers.

For the same broad reasons and because the autumn drone purge has taken place or is imminent and there is therefore very little risk of swarming some beekeepers deliberately further overcrowd their hives by uniting, or by boosting so as to increase the foraging force per stock. Sometimes the foraging force is further increased at the heather itself by bringing up separately supers which are already crammed with bees and uniting them to the heather stocks. (This is called plumping).

All this leads to increased risk of suffocation during transport and because of this the experienced heather man has become very expert on ventilation for transportation.

By reason of the very reduced swarm risk and the small average harvest from the heather the old time beekeeper was in the habit of taking his bees to the heather stance, dumping them there and not going near them for other than one pleasure trip until he brought them back home some five or more weeks later. This bad practice meant that he missed opportunities for exceptional harvests—up to 200 pounds per stock, and that he was left in ignorance of many things of interest and value in connection with the heather harvest. It also meant that from time to time when large scale losses were reported from the heather these were put down to acarine and not starvation.

STARVATION AT the heather is a real risk. Reduction to one 10-frame brood chamber and the cramming of this with brood and bees means that unless provision is made to leave marked combs of honey in a super there is certain to be a shortage of stores from the start. This coupled with inclement weather or a delayed nectar flow means a very serious position for the colony. The reference to the "marked" super combs is that this enables the other-than-heather honey to be kept separate very easily. One can, however, appreciate the difference both by color and smell.

Wear and tear on the bees at the heather has to be seen to be believed. The strong colony on double brood chambers which was reduced to one brood chamber or less for the heather often has difficulty in covering six or seven combs some four weeks later, and it is plain to see that most of the bees remaining are very old.

This is one of the most serious and urgent problems of the heather-going beekeeper. He cannot make a start at rectification until middle September when the bees are returned to the home apiary—probably in very bad

temper. Fortunately, the natural reaction of the bees is to make up for this cessation of breeding, and by feeding copious hot syrup (in England the winter sugar ration of ten pounds is the answer) the queen normally starts laying very quickly again and there is often sealed brood in the colony until November. Room must be provided for this by the insertion of an extra comb or putting a second brood chamber beneath. The sugar syrup also serves to assist in capping any heather honey remaining uncapped in the brood chamber, and is also useful

Author cutting sealed heather honey from frames for mushing and pressing. The press shown is the latest type. It is also extremely useful as a capping press.

(being the last food put down for storage) as the food to be used by the bees during the worst part of the winter.

There is the suggestion that in certain conditions (when the winter is wet) unsealed heather honey causes winter dysentery. The final sugar feed, therefore, has also the virtue of bringing about conditions which avoid this. Some heather beekeepers, however, seem to get by very comfortably without resorting to sugar.

In the weather conditions of northwest Europe it is very difficult to keep bees permanently at the heather, and

Author pressing mushed heather honey comb in heather press.

migratory beekeeping is indulged in. "Indulged in" is the correct description as so few beekeepers are other than amateurs and have few colonies. The man with two hives will migrate, putting his stocks on the back of his car, whilst the man with 20 or 200 will either hire or use his own lorry or cattle truck.

There is a method of management which enables the beeman to win a good surplus from both clover and heather, and also have colonies suitable for good wintering. It is rather complex and requires a high degree of beekeeping skill and judgment. It is based on the production of early mated queens—a difficult matter in this country.

Briefly, the colony is built up in the usual way for the clover flow, and in middle June or a little later the queen is taken away on one comb of brood and bees. The early queen in her nucleus is then united to the queenless stock.

As her urge is to follow the normal colony cycle she in turn builds up to a peak of egg laying (the second in the year for the colony) and this, together

with the boosting from the nucleus produces a colony which is prime for the heather.

Meantime, the old queen on her comb of brood has been returned to the home yard and encouraged to build up into a strong nucleus of young bees. When the bees are brought back from the heather this nucleus is united to its colony after killing the old queen, and the sadly worn out colony again revitalized.

By this means the colony winters with a young queen, young bees, and plenty of stores.

The special skill is in rearing early queens, in building up the nuclei and timing the June uniting. The latter is very tricky.

There are many designs of hives and entrances to cater for heather movement although the single-walled types of hive similar to the Langstroth are coming into more popular use. At the same time there remains a very strong body of opinion that the double-walled hive is the better. In spite of the changing opinion we shall see many double-walled hives at the heather in 30 years' time. I have seen hives there—in good condition, too—which have made the annual journey regularly for 50 to 60 years.

The greatest fag about the heather harvest is the honey itself. Because of its extraordinary qualities it cannot be extracted. The honey and comb are either scraped off the midrib or the comb is mushed up, the mush being put into a hessian bag and the lot put through a press to separate wax from honey. Apart from the fact that heather honey in the comb is one of the tastiest things in nature, this monotonous labor makes section-honey getting at the heather very popular.

Does It Pay to Rear One's Own Queens?

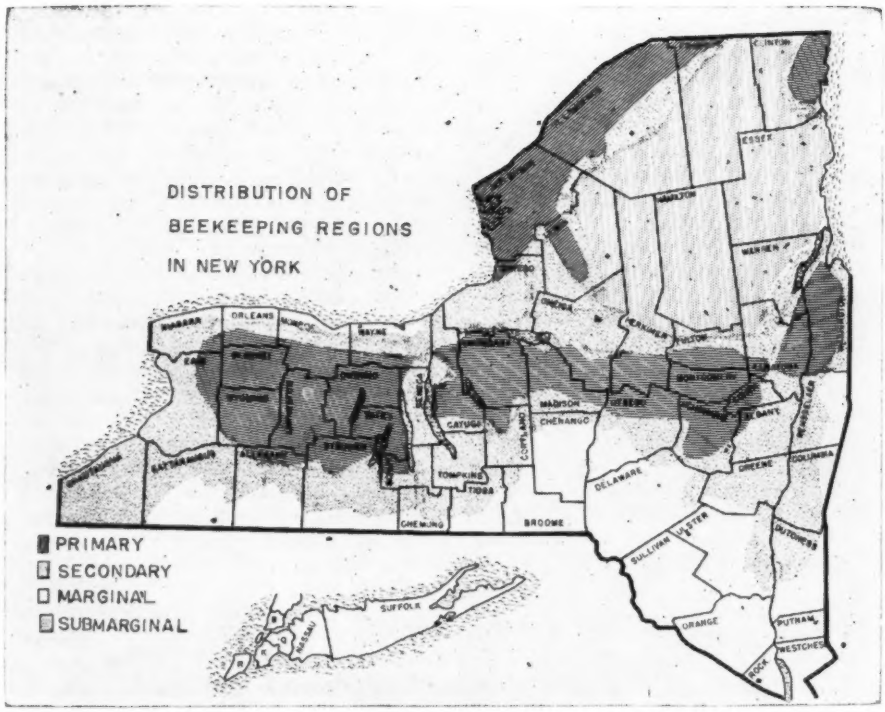
By E. S. Miller, Valparaiso, Indiana

WHILE IT is always advisable to keep a few young queens in nuclei with which to replace old and failing queens, building nuclei up in summer into full colonies for increase or for replacement of losses, necessitates the removal of a considerable amount of brood and perhaps honey from producing colonies, thus reducing the crop. In the white clover region or wherever the fall flow is light or uncertain, summer-reared colonies become, for the next eight or ten months, consumers rather than producers of honey. Furthermore, there are likely to be winter losses. Exceptions may be noted for localities where there is a heavy fall flow or where the main flow is late.

All colonies not in prime condition should be united in August and the queens confined to the lower story. The old bees will then be utilized in helping to store whatever fall honey there is available without the necessity of feeding so much brood. These strong fortified colonies, with 70 pounds or more of honey and pollen in the food chamber and below, usually come through winter without loss and may be divided in spring, thus enabling increase to be made at a time when it is profitable.

For a number of years I sought to improve my bees by rearing queens from the best producing colonies that did not attempt to swarm. It appeared to be a worthwhile undertaking, for colony production was largely increased over that of earlier years and was considerably greater than the average in this area. Also, swarming became less each year until, during the last several seasons, there were no swarms. These results, however, may have been due largely, if not chiefly, to improved methods of manipulation. But did rearing queens and building nuclei into full colonies result in greater profits? I realized later that it did not and that I was losing tons of honey in my efforts to improve the stock.

It would have been far better to have left improvement of stock to those who specialize in that kind of work and to have made increase in early spring with divided colonies and purchased queens. Then, by uniting at the beginning of the main honey flow, I could have secured about double the amount of surplus honey. In later years I found this method to be entirely practicable in the production of extracted honey.



This map, the first of its kind for New York State, shows the general distribution of beekeeping areas. The reader is referred to the text for more detailed information. This map was prepared by A. C. Gould, Apiculturist for the New York State Department of Agriculture and Walter Barth, Assistant Editor of Gleanings in Bee Culture.

Where to Keep Bees in New York State

By A. C. Gould and Walter Barth

BEEKEEPERS ARE always looking for better locations, but in these times of intensified beekeeping they are often difficult to find. If an area shows good possibilities you can be certain that it will be nearly overstocked as soon as the word gets around. To remedy this situation we prepared a map with descriptions of the different beekeeping areas..... now the rest is up to you.

Although honey and pollen plants have wide distribution, it would not be wise for beekeepers to establish commercial apiaries indiscriminately in the state. In order to point out the value of different areas to beekeepers, we divided the state into four regions, primary, secondary, marginal, and submarginal. **There are exceptions to each group** but the localities are too small to be noted on the map

Primary Region—Commercial beekeeping is generally feasible in this area. Primary or secondary honey plants are in abundance and are dependable annual yielders of nectar. Again there are exceptions, but this area is usually reliable. Parts of the wild thyme **(Thymus serpyllum)**, blue weed **(Echium vulgare),** buckwheat **(Fagopyrum saggitatum,** formerly **F. esculentum)**, and goldenrod **(Solidago** spp.) areas are included.

Either the entire or parts of the following counties are included in the primary region (see map):

1. **Western area:**
   Niagara, Erie, Orleans, Genesee, Wyoming, Allegany, Steuben, Livingston, Yates, Ontario, Monroe, Wayne, and Schuyler.
2. **Central and Eastern area:**
   Cayuga, Cortland, Onondaga,

Madison, Oneida, Herkimer, Otsego, Schoharie, Fulton, Montgomery, Schenectady, Albany, Saratoga, Warren, and Washington.

3. **Northern area:**
Jefferson, St. Lawrence, Lewis, Franklin, and Clinton.

Secondary Region—This region will also sustain commercial beekeeping but honey crops are not harvested with annual regularity because the nectar sources are not dependable yielders. Here a good honey crop may follow a few seasons of dearth. The goldenrods (**Solidago** spp.) and Aster (**Aster** spp.) are important nectar sources in this region.

Either the entire or parts of the following counties are included in secondary areas (see map):

1. **Eastern area:**
Dutchess, Ulster, Columbia, Greene, Delaware, Rensselaer, Warren, Saratoga, Schenectady, Schoharie, Otsego, Fulton, and Herkimer.
2. **Central area:**
Oneida, Madison, Chenango, Cortland, Cayuga, Tompkins, Seneca, Broome, Tioga, Chemung, and Schuyler.
3. **Northern area:**
Oswego, Jefferson, St. Lawrence, Lewis, Franklin, and Clinton.
4. **Western area:**
Steuben, Allegany, Cattaraugus, Chautauqua, Erie, Niagara, Orleans, Monroe, and Wayne.

Marginal Region—Large apiaries are usually not economical in these areas, as indicated by the absence of commercial beekeepers and the abundance of hobby apiarists. This is likely due to the lack of major honey plants and mountainous terrain that is not generally suited to agriculture. Goldenrods (**Solidago** spp.), Aster (**Aster** spp.) and many of the tree sources are important nectar plants in this area.

Either the entire or parts of the following counties are included in the marginal region (see map):

1. **Eastern area:**
Westchester, Rockland, Putnam, Dutchess, Orange, Ulster, Sullivan, Delaware, Otsego, Warren, Columbia, Rensselaer, and Washington.
2. **Central and Western area:**
Chenango, Broome, Tioga, Chemung, Steuben, Allegany, and Cattaraugus.
3. **Fruit belt of Lake Ontario:**
Niagara, Orleans, Monroe, and Wayne.

A. C. Gould

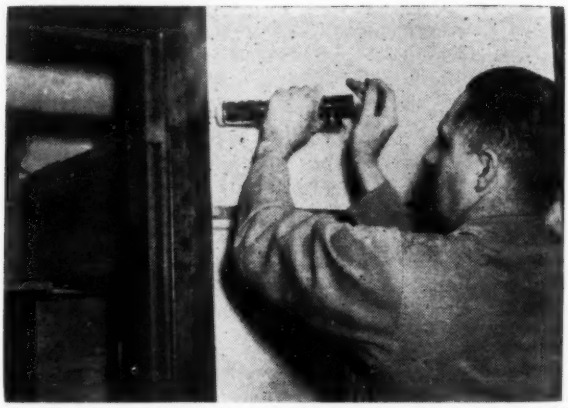
Submarginal Region — Commercial beekeeping is not practical in this area. The region is mountainous and unsuited to agriculture. And in some localities single colonies might find some difficulty in gathering sufficient nectar to winter.

Either the entire or parts of the following counties are included in the submarginal regions (see map):

1. **Adirondack Mountain area:**
Lewis, Oneida, Herkimer, St. Lawrence, Franklin, Clinton, Essex, Hamilton, Fulton, Warren, and Saratoga.

At Last, Bees, Yellow Jackets, and Wasps Can Be Easily Exterminated

By Richard L. Post*



A hand duster in operation, illustrating how the dust penetrates narrow openings and crevices. Note the dust sifting through a crack in the door jamb.

AT LAST, we have a simple, economical "one shot" application for controlling troublesome bees, wasps, and yellow jackets. Heretofore dusts were applied and the entrances and cracks had to be plugged for several days.

Honey bees and yellow jackets are beneficial insects and their control is recommended only when necessary. The following results using simple equipment show how inexpensively unwanted swarms and nests can be destroyed. Mr. G. Ramstead, manager of a store in Wahpeton, reported annoyance from honey bees coming into his store through cracks in the partition. A Hudson cadet duster and a small quantity of 25 percent Lindane wettable powder were mailed to him with instructions to apply it in the cracks. He reports, "We applied the Lindane and in one application it completely destroyed the terrible infestation we had here. It was really effective."

Andrew Skarvold, of Christine, states that " I have applied 25 percent Lindane with good results. I have been bothered with bees for years, but I am now seemingly rid of them. It is certainly an easy and effective way to kill bees, and I can recommend it to others who have to contend with the same trouble."

Kenneth Hoffert, of Barney, reported, "We have bees between our walls and the honey is starting to come through. Could you tell us a sure way to get rid of bees?" A week later he wrote, "Am returning the duster. Thanks. No sign of bees a few hours after application; worked perfect."

A farmer came in and said that he had had a swarm in his home for five years and several adults and children had been stung and that he was afraid to let his small boy outside. He tried smoke, plugging the holes in a ten-foot strip of eaves, and renailing clapboards to close all holes without success. On cold days they would light on the screen and enter the home. He was given a can of 25 percent Lindane and a small hand duster. The dust was applied to all cracks very early on a cold morning. Only one duster full was used. When the dust was forced into the holes he could see the dust seep out from under the shingles several inches away. The next morning dead bees were lying around the yard. He was told to wait a week before returning the dust and duster in case one application of such a small amount would not control a large, well-established colony. One week later no live bees were observed and the brood and young bees hatching out were evidently killed.

With these spectacular results, Lindane passed a difficult test and we feel free to recommend its use. Remem-

* Associate Entomologist, N. Dak. Agric. College Experiment Station, Fargo, N. D.

The swarm shown above made its home in the side of a dwelling and had produced a lot of comb at the time the bees were killed by an insecticide.

ber to warn the occupants that **the honey is contaminated and cannot be used for food.** Besides it will render the honey an unpalatable musty-moldy flavor very different from the not too unpleasant odor of Lindane.

The Hudson duster illustrated costs 75 cents or 95 cents, depending on size, and can be purchased at most hardware stores.

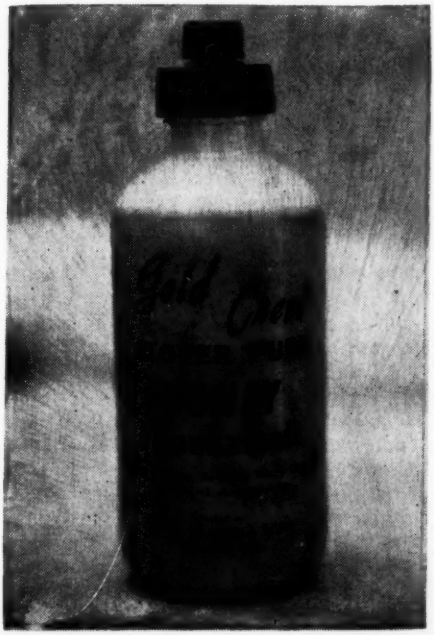
Lindane is used as a seed treatment for wireworm and fly control. It is expensive, but a pound container of 25 percent strength, retailing for $2.50, will last for several treatments. Materials we used have trade names of Isotox, Mergamma, and Geigy Lindane. Other brands will be available in different sections of the country. I would advise the 20-25 percent concentrate dust, as stronger concentrations are proportionately higher in price.

I have never had the opportunity of applying the Lindane dust directly to a large cluster of honey bees. If any beekeeper had this experience, I am requesting that he inform me of his experience and state how long after the initial contact it took for all the bees to become inactive or die.

This method has another advantage in that scouting bees will be killed for several months. This will prevent the spread of foulbrood if the swarm destroyed happened to be infected.

Here is the Chance to Squeeze Your Honey

More sales may be expected now that housewives are no longer troubled with dripping or running honey. The new polyethelene honey container eliminates the bothersome drip, according to Duane Babcock ("Bab") of San Antonio, Texas. Any desired quantity of honey can be squeezed from these containers. This no-drip, 12-ounce container can also be reused—another good selling point. R. W. Barnes and Sons of Oakland, Nebraska, have packed some of their honey in these new polyethelene containers.



Honey Processing

Part II. Preventing Granulation and Conserving Volatile Components

By Huber A. Seabright, Columbus, Ohio

(Continued from July issue)

THE MATTER of granulation of honey has received a great deal of study. Some honeys granulate more readily than others depending principally on the relative proportion of the types of sugars they contain. Other factors include dust particles, temperature, and microscopic crystals remaining in the comb from the preceding season.

We can't do much about the sugar content of our honeys. We can reduce the dust and foreign materials to the lowest minimum by good housekeeping, air filtering, and filtering of the honey. There is only one way to eliminate the crystals from old combs and that is to have the bees put the honey in new combs. Storing the honey where the temperature can be held uniformly around 65° F. to 70° F. is generally recommended. Over 80° F. should be avoided as much as possible as this increases the tendency toward discoloration. (See "The Hive and the Honey Bee" P. 393.)

There is considerable difference of opinion relative to the merits and demerits of heating honey to prevent granulation. Open tank heating causes the volatile flavors and valuable elements to be driven off and lost. Overheating causes discoloration and underheating does not remove all the crystals so that granulation occurs later.

If honey is to reach and maintain the maximum in appeal to the everyday consumer, too much care and attention cannot be given toward retaining these natural flavors and avoiding offensive granulation.

If instead of heating the honey in open tanks, where the volatile flavors are allowed to escape, we confine the honey in a closed heater equipped with automatic thermostatic temperature control in which the honey flows continuously at a controlled rate, the heating will be more uniform and more of the volatile flavors retained. The writer has been experimenting along this line and the scheme of such a heating installation is submitted in the sketch opposite. No adequate results are available as yet.

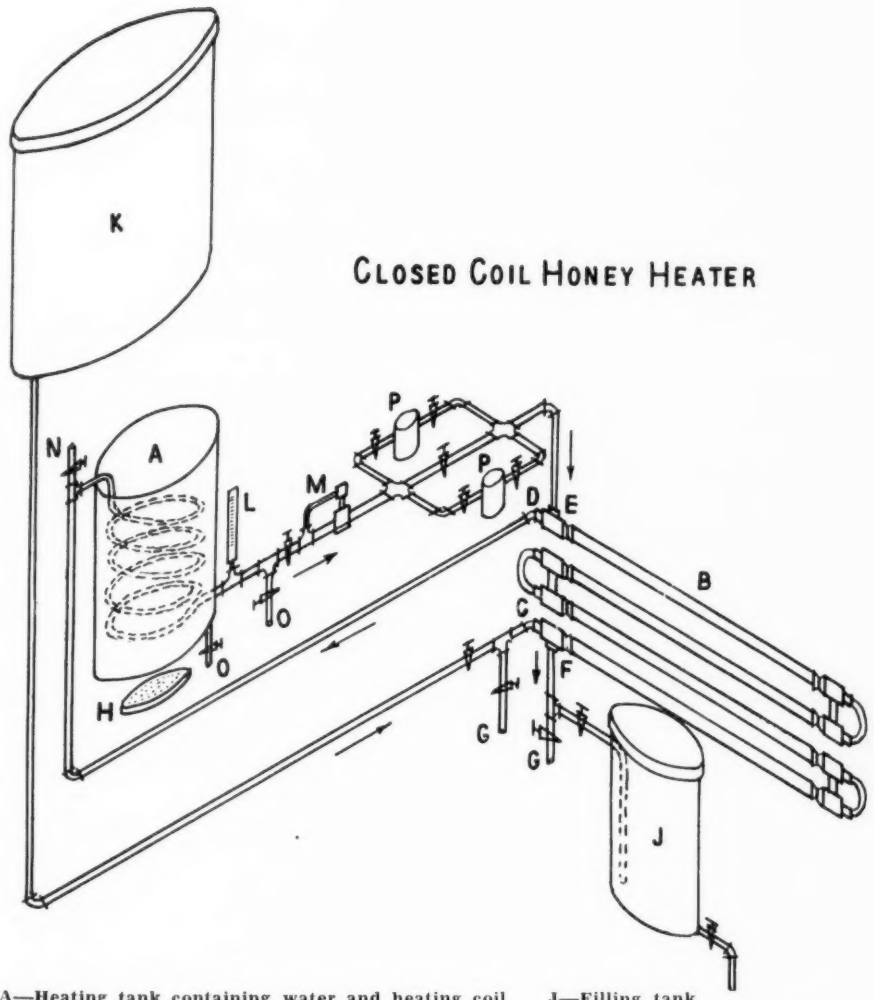
As the cold honey advances through the heat exchanger (B), heat is taken up from the warm honey which has been through the coil of the heater (A) so that by the time it reaches the heater it is almost as warm as the honey leaving the heater. Likewise the honey returning through the heat exchanger (B) cools off by the time it reaches the exit and filling tank (J). The thermometer (L) shows the temperature of the honey leaving the heater and is a guide in adjusting the thermostatic valve (M), which controls the flow of honey leaving the heater.

The heating coil should have ample size to hold the honey passing to a temperature of 160° F. for at least 15 minutes. If the honey is partially crystallized longer heating would be necessary. If the rate of flow is 60 pounds every 15 minutes, this coil should contain at least 30 feet of 2-inch pipe or 50 feet of 1½-inch pipe.

A closed heater of this type permits the honey to be heated as required without exposing the warm honey to the air. By keeping close-fitting covers on extractors, filters, storage, and filling tanks, the volatile flavors of the honey will be conserved.

The tendency to granulate is increased when combs are used which contain minute honey crystals from the honey formerly stored in them. Honey stored in new combs which are free from such crystals has much less tendency to granulate. According to the "Rauchfuss Method" (American Bee Journal, July, 1939) the entire comb is removed with the honey, run through a suitable heater, cooled, and the honey separated from the wax. The empty frames are fitted with comb foundation, put into supers, and made ready to put on the hives. The honey is further heated and strained for packing or storage.

CLOSED COIL HONEY HEATER

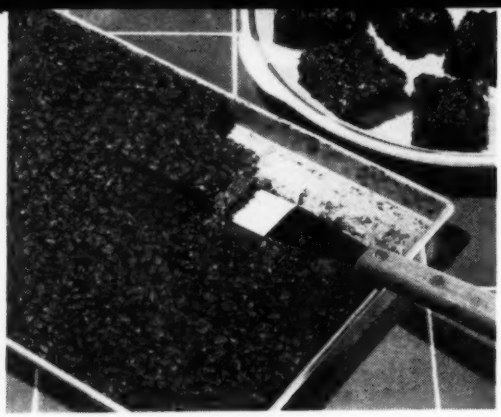


A—Heating tank containing water and heating coil
B—Double pipe heat exchanger
C—Honey entrance to inside pipe
D—Honey exit connection
E—Heated honey connection to space between pipes
F—Exit of honey from heat exchanger
G—Cleanout drain
H—Oil or gas burner, or tank may be heated with steam coil
J—Filling tank
K—Storage or settling tank (elevated)
L—Thermometer
M—Thermostat controlled honey outlet valve
N—Air vent
O—Drain
P—Strainer
Symbol—Valve

This system has certain advantages in that it eliminates the uncapping and extracting operations, facilitates clarification of the honey, eliminates honey crystals from re-used combs, and produces an abundance of good wax. It also fits in well with comb and chunk honey production; however, the heating process doubtless drives off a good part of the volatile flavors.

If instead of melting the combs to get the honey, we place them in a slotted or perforated cylinder, lined with two or three thicknesses of 64-mesh filter cloth and apply pressure similar to the ordinary cider or wax press, we get a sparkling clear honey without harmful heating or loss of flavor. For this process the room temperature should be 80° F. or warmer. If granulation at some later time is to be prevented, such honey may be processed

(Continued on page 509)



Start Practicing Now

By Mrs. Benj. Nielsen
Aurora, Nebraska

Honey chocolate squares. Photo courtesy Kellogg Co.

BETTER START practicing now, Mom, for those sure-to-be-made raids on the cookie jar next month. When the small fry dash in from school and need a quick pickup, and in-between snack there is nothing better than honey-way cookies!

There is no good reason to think of refrigerator cookies in terms of summer months only. There is no better insurance against heavier-than-usual raids on the cookie jar, or being caught short for a spur-of-the-moment get-together than having several kinds of honey-way dough neatly, snugly wrapped, awaiting in the refrigerator. Any cookie dough handles more easily for having been chilled and many doughs can be kept indefinitely if well wrapped.

A word of caution if you use a cookie press: do not grease the cookie sheet; the cookie sheet should be cold or the fat in the dough will melt and the cookies pull away from the sheet when the press is lifted; hold the press upright and force out the dough until it appears at the edge of the mold, then lift press away.

Honey Chocolate Squares

Two 6-ounce packages of semi-sweet chocolate, chopped or bits, ⅔ cup honey, and 5 cups oven-popped rice cereal.

Melt chocolate over hot but not boiling water. Add honey and mix well. Remove from heat. Add cereal and stir until well-coated with chocolate. Press into greased 13x9-inch pan. Cut into squares when cool. Yield: 24 2-inch squares.

Honey Bread Crumb Cookies

Two-thirds cup shortening, 1 cup brown sugar, 2 eggs, well beaten, ½ cup honey, 2½ cups fine bread crumbs, 1 cup cake flour, ½ teaspoon soda, ¼ teaspoon cloves, ½ teaspoon cinnamon, 1 teaspoon baking powder.

Cream shortening and sifted sugar thoroughly. Add beaten eggs and honey. Sift together dry ingredients and add slowly to liquid mixture. Mix thoroughly. Add enough additional flour to make a stiff dough. Chill and roll thin. Use a simple cookie cutter. Glaze by brushing tops with milk. Bake in moderate oven, 350 degrees F., 6 to 8 minutes. Yield: 5 dozen 2-inch cookies.

Honey Cookies

Two-thirds cup shortening, ½ cup sugar, 1 cup honey, 1 egg, beaten, ½ cup sour cream, 5 cups cake flour, 1 teaspoon soda, 1 teaspoon cinnamon, 1 teaspoon nutmeg, 1 teaspoon cloves, and 1 teaspoon salt.

Cream the shortening with sugar, add honey, and blend well. Combine egg and sour cream and add to shortening mixture. Sift dry ingredients and add to liquid. Form with cookie mold or drop from teaspoon and flatten with a knife. Bake in moderate oven, 350 degrees F., 15 minutes. Yield: 11 dozen 2-inch cookies.

Honey Chocolate Oatmeal Cookies

Two and ½ cups cake flour, 1 teaspoon baking powder, ¼ teaspoon soda, ½ teaspoon salt, 1 teaspoon cinnamon, 1 cup shortening, 1¼ cups honey, 2 eggs beaten, 2 ounces chocolate, melted, 1½ cups rolled oats, 1 cup coconut.

Sift flour, baking powder, soda, salt, and cinnamon together. Cream shortening and honey. Add beaten eggs, melted chocolate, and rolled oats. Mix thoroughly. Add sifted dry ingredients and coconut. Drop from a teaspoon onto a greased cookie sheet. Bake in a slow oven, 325 degrees F., 20 minutes. Yield: 5½ dozen cookies.

Live and Learn

By Propolis Pete

WHEN I FIRST started to keep bees out here as a week-end proposition, I asked everybody I met if they knew of any beekeepers in the neighborhood. Nobody knew any beekeepers, so I thought that I was the only one for miles around. In 1950 I moved here to live, and it seems that every time I turn over a stone I find a new beekeeper. None of them have many colonies; in fact, most of them marvel how I can find the time to take care of the 25 that I now have in two yards. Because I am such a big beekeeper, I seem to be working up quite a reputation as knowing everything there is to know about bees. Of course you know better, and so do I. I'm not kidding when I say that the longer I keep bees, the less I know about them. With the passing of the years, I have found some short cuts, and as best I can, I pass them on when asked.

What I know about bees came from reading about them in books, and then finding out the hard way why they didn't do what they were supposed to do. Yet, when you stop to analyze a given condition, generally you will find that the books were right, but that you were doing the right thing at the wrong time, or visa versa. For instance the books will say that in order to do a certain thing, you must find the queen. Well, 99 percent of the beginners, including myself, immediately understand that this means that you have to look at every cell in every frame in every hive, every time that you go near it. This should be done once a week, and since the active season runs over four or five months, a beginner's honey generally costs $2.00 a pound, figuring labor at 10c per hour.

A couple of weeks ago, right in the height of the swarming season, I was looking for queen cells. A beginner who came to sit at the feet of the oracle caught me at it. He watched me separate the hive bodies and peek up under. This happened several times, before he asked me what I was doing. When I told him that I was looking for queen cells, he asked me if I had Xray eyes or something. So I showed him exactly what I was looking for, where I was looking, and why. I still think that he doesn't fully believe me, but he said afterward that he was going to give it a try. With his three colonies, it took a whole week-end to do what I was doing in 15 minutes.

Speaking of swarming, I had my first swarm in three years on June 20th. It was three years to the day. (I am speaking only of the home yard. My "outyard" is an entirely different story.) It was on June 20th, 1950, that we moved out here from the city. I had supervised the loading of the furniture van, started it on its way out here, and then gone about some last minute business. The truck beat me, and the whole crew met me with wide smiles and information to the effect that my bees had swarmed just before I got there. They were anticipating quite a bit of entertainment, but they were disappointed. The cluster was way up in the top of a tall pine tree. After the crew had gone, I maneuvered the best part of the afternoon to get them down. Then they went back up again, and I said goodbye. I had more important things to do than save a half-pint swarm.

So far as the swarm this year is concerned, guess which hive it was. Yep, it was the one on which I was depending for my first comb honey. So, if you hear a loud pop between the time that this is being written and the time that you are reading it, you'll know that it is me, busting. You know, I promised to get some comb honey this year or bust. Maybe I won't have to bust, because the bees were snooping around in the section boxes today when I looked. It won't be first grade, or fancy grade, or anything like that, if I finally get them to seal it over. I have an idea that it will be about grade ten or thereabouts, but it will be comb honey, and at least a partial victory. I hope.

I can't understand exactly what happened. Everything seemed to be working according to Hoyle in that colony, even though the rest of the yard was going haywire. I was just

(Continued on page 510)

Second Glances

C.M. Isaacson

Air bubbles in honey cause crystallization (page 393). They are difficult to remove, once in — especially if of small size — so methods of handling the honey to begin with should be such that as few bubbles as possible are incorporated. Proper use of the honey pump is perhaps the biggest factor; and also the honey should not be allowed to fall any great distance through the air while straining. Thorough straining which removes most small particles (that serve as nuclei for crystallization) is also important. But is it **low** temperatures that induce the most rapid crystallization or rapid changes of temperature? Most of us have seen honey kept over winter in a steadily cold place remain liquid.

The pyramid style of a multiple-queen hive should be successful in eliminating high piling of supers during a good flow (page 395). Mr. Gouget's system and arrangement of equipment should work well if one wishes a three-queen colony. If one believes the honey flow will be such that the extra labor and equipment will be justified, the plan should be worth trying.

Checking the moisture content while processing honey can help in keeping the quality high — especially if the weather happened to be rainy or humid. Mr. Seabright tells of several simple ways for watching approximate moisture conditions as well as a more expensive instrument called a refractometer (page 402). As he mentions, it is well to keep lots of high moisture content honey separate.

Good smoker fuel should not only light easily and burn slowly with a cool smoke, but should be such that the smoke will not impart an objectionable taste to the honey (page 406). As Mr. Keller says, a fine ash is not desirable either, but this can be prevented from falling from the smoker by keeping a quantity of green grass in the smoker nozzle. This grass also helps to keep the smoke cool, and insures against a burning bit of fuel dropping out and possibly causing a fire after one leaves (this applies during dry weather).

Advertising and more advertising is the secret of selling, says R. H. Rusher (page 407)—and he appeals to beekeepers to pool a percentage of their income for large scale national advertising through the American Honey Institute and other means. It is good advice. We have a product that is good **naturally.** We need to tell the consumer public about it—continually and effectively! We would insure our future by so doing.

Carelessness is the big factor in the continuance of AFB, says Robert Mead (page 412), and I might add the same is true in more or less degree about most bee diseases. Sulfa treatment in the hands of a careful beekeeper can almost accomplish "miracles" in the big majority of cases (the stubborn ones should be done away with and combs melted or burned). Careless or ignorant use of the same drug, however, can actually spread the disease by inducing a false sense of security—I have seen this in actual practice (I would almost like to say "criminal" carelessness and ignorance, for it can harm not only the user but all about him). Resistance in a strain of bees can likewise be a big aid—but it also has the same "defect"—one must not rely on it completely. I might mention here that a seemingly new strain of European foulbrood has made its appearance and among the present strains of bees is many times more deadly than AFB. It can destroy a colony's morale and ability to store a crop in ten days if nothing is done to check it—or if it is not discovered in the early stages. We need much research if beekeeping is to stay a healthy industry.

Nosema disease causes much loss—more than ever suspected, for the beekeeper may suffer a partial crop loss from much of his holding without being aware of the cause. Research with fumagillin as a treatment has also been under way in Minnesota, but results are not too conclusive up to now. In some instances it has seemed very successful, but further trial is needed.

Bee Facts

(A Digest of Scientific Research)

Introduction

[Unfortunately, a lot of important research is neglected because beekeepers do not have the time to interpret the "language of science". So considerable practical information is lost to them—information that can either be valued in dollars and cents or in a better understanding of bees and beekeeping.

This monthly column will be a digest of scientific information, both new and old. Points that we consider of interest to our readers will be mentioned. References will be given so that interested persons can obtain the complete report.

We hope that Gleanings' readers will bring any reports to our attention that may go by unnoticed.—The Editors.]

●

Chemical Nature of Royal Jelly

The effects of royal jelly on the development of larvae is known to many beekeepers, but the make-up of this wonder food may be unknown to them.

A few years ago G. F. Townsend and C. C. Lucas conducted research to determine the chemical nature of royal jelley. It was rather difficult for these scientists to collect sufficient royal jelly for their investigation because of the small amount of this material that could be obtained from a single queen cell. Queen cells containing larvae two to three days old were used as a source of royal jelly.

Analysis of royal jelly revealed some of the contents to be small amounts of beeswax, sugars (mostly glucose and fructose), acids, alkalis, inorganic salts, and nitrogen compounds. The scientists separated the royal jelly into four fractions, and they found some evidence that the material responsible for the development of the queen bee may be in fraction one.

Reference: Townsend, G. F. and C. C. Lucas.
1940. The Chemical Nature of Royal Jelly. The Biochemical Journal, Vol. 34, Nos. 8 & 9, pp. 1155-1162.

●

Filtering Can Remove Vitamins from Honey

With the trend in honey processing toward the use of filter presses it was interesting to learn what the effect would be on the finished product.

"Clarifying with diatomaceous earth diminishes the vitamin content of honey and therefore should be avoided," according to M. H. Haydak and others of the University Farm, University of Minnesota. Diatomaceous earth is a common filter aid used in honey filter presses.

Chemical analysis of honey by these specialists showed the following substances to be present: thiamine, riboflavin, ascorbic acid, pyridoxine, pantothenic acid, and nicotinic acid. The amount of these ingredients vary, the scientists say, depending on the source of the honey and the number of included pollen grains.

Reference: Haydak, M. H., L. S. Palmer, M. C. Tanquary and A. E. Vivino.
1942. Vitamin Content of Honeys. J. Nutrition, v. 23, no. 6, June.

●

Notes on Nectar

Did you know that in most cases more nectar is secreted on the first day after a flower opens than at any other time of the bloom? This is what A. Fahn discovered when he studied the effects of environment on nectar secretion.

Fahn also noted that the lowest secretion of nectar usually occurred on the last day of bloom. In most of the plants investigated, he observed a decrease in nectar secretion as the flower gets older.

In some plants the male flower may yield more nectar than the female flower, but this apparently depends on the size of the nectary. It is interesting that this fact can hold true for a species. In one group studied, "the male flower produced approximately 4.5 times as much nectar as the female." On the other hand, in a different species the female flower is the chief producer of nectar.

It was also shown that injury to the flower would affect nectar secretion. With the removal of the petals in one experiment the secretion of nectar was reduced by approximately 80 percent. However, the nectar became extremely concentrated because greater evaporation of the nectar was possible. In one flower species **(Tecomaria capensis)** nectar secretion was stopped almost entirely when the nectary was injured.

Reference: Fahn, A.—1949. Studies in the Ecology of Nectar Secretion. Jour. Botany. Jerusalem series 4:207-224.

A Talk to Beginners

M. J. Deyell

Trying Out New Ideas

"Be not the first by whom the new is tried
Nor yet the last to throw the old aside."

There are some beekeepers who like to try out every new idea, so-called, in beekeeping, also new beekeeping equipment. Others hesitate to try out new ideas and go along in the same old way.

It seems to me that all of us should be ready and willing to try out a new idea at least on a moderate scale. Notice I said, on a moderate scale.

It would hardly seem feasible to devote all of one's bees to experimenting with a new idea. If we did that, we would have no check colonies with which to make a comparison.

We Are Always Learning—or Should Be

Some years ago I learned from experience that one should be careful about putting on supers containing wet combs during a dearth of nectar, especially when the weather is warm. The honey in the combs will get the bees stirred up and they are likely to sting any living thing nearby.

During early June I wanted to put some supers on one of my yards, since I intended to be away for a few weeks and the main honey flow would probably start in the near future.

ONE EVENING I hauled out 30 shallow supers containing wet combs, just as they had come from the extractor the previous fall. According to the best authorities combs coming from the extractor should be dried by the bees. Wet combs with granulated honey may cause honey to granulate. I used a Plymouth Suburban, sometimes called a station wagon (by the way, I can get 30 shallow supers into the back of this machine, when the back seat is folded flat on the floor). Well, I drove out to this yard of 30 colonies about 7 o'clock in the evening. We are running on DST so the sun does not go down until 9 o'clock during June. After I had put on four or five supers, the bees began flying around my car and before I had finished the job, the apiary was in an uproar. I discovered, however, an easier way of putting on the supers, namely, placing each super on top of the inner cover under the outer cover with the center block removed so that the bees could go up through the small hole in the cover, to clean up the honey on the wet combs. If I had done this when I started putting the supers on, I would have avoided getting the bees stirred up so badly.

Jack Deyell

"Duds"

Even though I try to have all colonies approximately alike in strength when the honey flow starts, I find a few colonies that do not build up normally and store very little surplus honey during the season. Such colonies are a detriment and not worth keeping; they simply occupy space.

Occasionally, such a colony will refuse to accept a queen that is introduced to replace the old queen. I have sometimes tried to give such colonies frames of brood from which they could rear a queen, and, in some instances, they would not rear young queens. It hardly pays to keep such colonies. About the only thing one can do is to shake the bees off the combs in front of another colony and use these combs in supers.

Looking Ahead to Next Season

Regardless of how good or poor the season has been it seems necessary in

this latitude during August to plan ahead for next year.

The majority of beekeepers in the North winter their bees and this can be done quite successfully, provided the owners leave an adequate amount of stores, and have good strong colonies to go into winter quarters. There are some beekeepers in the far north who kill off their bees in the fall and start with packages next spring.

Getting Food Chambers Well Filled

For the benefit of those who are just beginning beekeeping, it should be said that a food chamber, as applied to a bee hive, is a shallow or deep super well filled with honey, reserved for winter stores, this in addition to the honey there may be in the lower chamber. Such a hive is sometimes called a double brood chamber hive. Most beekeepers are now using this type of hive. It provides ample comb space for brood rearing, also for an abundance of honey and pollen. Last fall, my double brood chamber or food chamber hives, were unusually heavy with honey. This spring, during the fruit bloom and dandelion honey flow, I wondered if the bees would need all of the honey. Some colonies had 20 or 25 pounds of honey left over during late May and early June. These colonies were very populous in bees.

FOLLOWING the fruit bloom honey flow we had a spell of cool weather and a short dearth of nectar which caused the bees to use an unusual amount of stores. During such a cool spell combs of honey in a brood chamber disappear like magic. It has been said on good authority that one full comb of honey is required to produce a full comb of brood and one pound of pollen is required to produce one pound of bees. The colonies in question did have enough honey to keep up maximum brood rearing but if they had had less honey, brood rearing would have been curtailed and consequently they would not have been up to maximum strength to take full advantage of the major honey flow when it began.

This matter of getting the food chamber filled in the fall is not so simple as it may seem. For example, in regions where there is practically no fall honey, a colony, if left in a double brood chamber with a queen excluder above the two chambers and supers above the queen excluder, will sometimes put most of the honey in the supers leaving the double brood chamber short on honey for winter stores. In some regions it seems preferable to confine each queen down to a single brood chamber during the latter part of the season, leaving the food chamber on top of the queen excluder until late in the fall. If the bees are not storing any surplus and simply making a living, it is well to remove all supers. The object of confining the queen below, in a single brood chamber during the late summer and fall is to prevent her from occupying the combs in the food chamber during the latter part of the season. This gives the bees a chance to fill the combs in the food chamber with honey and pollen. However, much of the pollen will be stored in the lower chamber.

IN THIS part of the country where there is a heavy fall flow, we usually permit the queen to occupy the combs of the double brood chamber hive. The honey comes in so rapidly that the bees will fill the combs in the food chamber, then drive the queen down to the lower chamber. Any surplus honey secured is stored in the supers above the queen excluder.

We find, however, that some colonies have a tendency to carry most of the honey up into the supers leaving comparatively little in the brood chambers. Other colonies have a tendency to stock the brood chambers well, not putting much honey in the supers.

There is an additional advantage in using the double-brood-chamber or food-chamber hive, namely, such a hive is likely to contain more pollen than a single-story hive. Some authorities now tell us that there should be the equivalent of five or six solid combs of pollen for each colony going into winter quarters. This pollen is used early in the spring for brood rearing before natural pollen is available. The cells of the combs used for the storage of pollen are about half filled, then honey is stored on top of the pollen. When this honey is used in the spring, the pollen is then available to the bees. What a marvelous provision this is for the future needs of the bees!

Editorials

Better—Not—More Meetings Since the same people and communities are frequently involved in meetings, quality of the meeting and not the number is of greatest importance. So says Charlotte Kirchner and Robert R. Pinches in Minnesota Extension Bulletin 266.

In a very easy-to-read style the authors discuss the make-up of a good meeting that results from good planning. They give pointers on arranging the time, date, hour, place, program, recreation, and refreshments for meetings. They also include the selection of committees to carry out the plans.

Here is a publication that all officers of beekeeping associations should own, and its free. Just write to the Office of Publications, University Farm, St. Paul, Minnesota, and ask for Extension Bulletin 266, "The Road to Better Meetings."

●

Beekeepers Shocked by Sioux Disaster We were deeply shocked upon hearing the news of the flood damage to the main plant of the Sioux City Honey Association at Sioux City, Iowa. The disaster could not have struck at a worse period—just before extracting time.

The entire beekeeping industry extends their best wishes for a speedy recovery. Damage is undoubtedly heavy but we are sure that the combined skill and efforts of the Association management and its members will bring Sioux successfully through this disaster.

A lot of beekeepers have come to depend on the Sioux Honey Association to market their honey, and this is evident by the number of branches of the Association scattered throughout the United States. So it was good news to learn that the main honey plant will be in operation sometime in August. See page 496.

●

New Queen Cage Research The present queen cages are designed for the convenience of the beekeeper and not the queen bee, reports E. B. Wedmore, English beekeeping specialist. Too little attention is given to temperature, water supply, and bee behavior during the confinement of the queen and her attendants, he pointed out.

Waterproofing of the wood for the cage, particularly the end covering, is recommended to keep the candy from becoming too dry.....and hardwood is not exempted. It would also be advantageous to use an appreciably larger passage instead of the one now in use, so that the queen can be comfortably persuaded to come through when clear.

Wedmore urges that queens be introduced alone, without any attendant bees. He has frequently observed that while a colony will accept a newly introduced queen her accompanying attendants will be rejected. He believes that removal of the attendants will greatly increase the chances of queen acceptance.

Reference: 1952. Wedmore, E. B. Postal Queen Cages. BRA 77. Bee Research Association. 530/1 Salisbury House, London Wall, London, E. C. 2.

●

What's New in New York More efficient management of apiaries, directed toward reducing the cost of producing honey, was Cornell's theme through its many 1952 service-letters, demonstrations, and exhibits. More efficient methods for handling, extracting, and preparing honey for market were also stressed, according to the 65th Annual Report of the New York State College of Agriculture.

Since beeswax, a byproduct of honey, is more favorably priced, the Cornell specialists gave particular attention to encouraging production as well as to methods of rendering and preparing it for market.

New York beekeepers can now look forward to an interesting research program at Cornell for 1953 with the following projects featured for investigation:

Honey, with reference to the origin of special ingredients (E. J. Dyce). Methods for the removal of colors from beeswax with special reference to preparation for market (W. L. Coggshall). Environmental

and behavior factors affecting the role of pollinating insects, with special reference to fruit and legumes (W. L. Coggshall). Study of wild insects and honey bees as they affect pollination and seed setting of legumes with some observations on the effects of insecticides on such beneficial insects (G. G. Gyrisco and W. L. Coggshall).

●

How Many Colonies for Alfalfa Bloom? With the increasing interest in pollination services beekeepers are wondering how many colonies are needed to efficiently pollinate an acre of bloom. This problem is as acute to the growers of alfalfa in Utah, as it is to the growers of vetch, crimson and Hubam clovers in Texas, and birdsfoot trefoil in New York.

George E. Bohart and George F. Knowlton, entomologists working at the Agricultural Experiment Station in Utah, have recently offered some pollination tips to beekeepers. These ideas are based on their experience with alfalfa seed production.

Bohart and Knowlton point out a few factors that determine the number of hives needed per acre. They are (1) the strength of the colonies, (2) the acreage of bloom and (3) the relative attractiveness of the field to be pollinated.

Strong colonies with a good food reserve are necessary for good pollination, and for this reason any estimate of the number of hives needed should be based upon strong colonies. Competing bloom should be taken into consideration but this cannot be easily controlled by the beekeeper.

According to the Utah entomologists, in judging the number of hives to be used, consider all acreage of attractive bloom within two miles of all colonies. Of course, they add, other hives within range of any of this bloom will also affect the situation.

"In the long run the number of colonies should be used upon (1) the experience of past years, (2) an appraisal of the numbers and activities of the pollinators, and (3) frequent checks on the condition of the bloom throughout the field. If evidence of deficiency is discovered, the number of bee colonies should be substantially increased without delay."

By now you are wondering how to check the condition of bloom to see if the flowers are pollinated. Well, it isn't as difficult as it sounds. When an alfalfa field is being adequately pollinated, Bohart and Knowlton point out that the wilted flowers and developing pods give it a characteristic brownish cast. On the other hand, they add, a field which retains a "flower garden" bloom is not getting enough pollination and will benefit from an increased supply of bees.

●

What's New in Florida H. S. Foster, Florida Apiary Inspector, reports that during the past years from 49 to 51 percent of the disease found in Florida has been traceable to migratory beekeeping, or bees from other states. Although these bees were brought in under certification from the state of origin, he adds, in some instances disease has been found within several days after their arrival in Florida. When this happens, the bees are removed from the State as required by Rule 41-1 of the State Plant Board.

During the period from July 1, 1950 to June 30, 1952, the amount of American foul brood in Florida was less than one percent, according to the inspector. And this excellent record was obtained at the low cost of slightly more than three cents per colony. Mr. Foster is to be commended on a job well done.

●

Hubam Clover in Texas The importance of honey plants seems to go in cycles, probably because the cultural practices determine the amount of acreage available to honey bees. Even a change in consumer demand can affect honey plant acreage, and nowhere can it be more clearly pointed out as in the buckwheat region of New York. So it was good news to hear of the Hubam clover investigations underway at the Texas Agricultural Experiment Station.

Hubam clover is normally a good source of nectar and pollen throughout the Blackland Prairie area and occasionally in other regions, according to Texas entomologists N. Weaver, A. H. Alex, and F. L. Thomas. Their determinations of the nectar taken from the honey stomachs of bees collected on Hubam clover averaged

about 48 percent sugar.

During the early blooming period of the clover, these investigators noticed competition from horsemint whose nectar had a concentration of 50 percent sugar. But during most of the blooming period the bees worked almost exclusively on the clover.

"With adequate numbers of honey bees, Hubam clover will yield about ten times as much seed per acre as clover from which pollinating insects are excluded," these Texans concluded. "And if each stalk has many open blossoms on it, this is an indication that there is not an adequate number of pollinating insects in the field."

●

Free Publicity Beekeepers can preach the benefits of pollination until they become "blue in the face", yet most farmers still believe that we just have an "axe to grind." But the publication of the "Marvels of Cross-pollination", in the July issue of the READER'S DIGEST, will do more good for the industry than any remarks from a hundred beekeepers.

Rutherford Platt, the author, very effectively points out the important role that honey bees play in cross-pollination. Readers are certain to be impressed when the author says that honey bees are responsible for the existence of half of our most beautiful flower species. And when you think about this fact, aren't you proud to be associated with the honey bee?

Through this simple presentation millions of people, farmers and city-folks alike, will suddenly become aware of the importance of honey bees. And you can help this free advertising program by recommending the article to your friends. The more people who read it the better....so let's talk about it!

●

Pollen Colors Many beekeepers often associate the color of a pollen load with a particular floral source, but this can be misleading.

If you have any doubts, then it's time to read "The Pollen Load of the Honey Bee" by Dorothy Hodges.

Mrs. Hodges points out that the color of pollen loads varies according to conditions, even when bees are working the same flowers. And, she adds, the color of a pollen load is usually different from that of the pollen grains taken fresh from the flower itself. This may be partly due to the moistening of the pollen by the bee before packing it into the pollen baskets. It could also be caused by the actual packing of the pollen layers and the changes in color produced by reflection of diffraction of light from the surface of the pollen loads themselves.

●

Nosema Apis and Larvae A fairly high proportion of the eggs laid by the queen of a colony suffering from Nosema disease fail to give rise to pupae, reports M. H. Hassanein, former beekeeping specialist at the Rothamsted Experimental Station, and now a faculty member at the University of Ibrahim Pasha in Egypt.

"Some of the eggs in such colonies either fail to hatch or, if they do hatch, a number of the resulting larvae die at an early age. When an egg fails to hatch the worker bees will frequently remove it and the queen may lay another egg in its place."

Hassanein points out that the larva of the honey bee does not become infected with **Nosema apis.** He concluded that these eggs died because they were faulty, or because they were not given adequate care by infected worker bees.

The deaths of very young larvae were most probably caused by inadequate feeding by infected worker bees whose pharyngeal salivary glands were not secreting normally. Feeding insufficient or poor-quality food could be another cause. Here the food is produced by healthy worker bees that attempt to feed an abnormally large number of larvae because their sisters are unable to do so.

Early infection with **Nosema apis** greatly reduces the quantity of brood-food secreted by the bees concerned, according to the Egyptian scientist. And it also tends to cause them to become field bees at an abnormally early age.

Reference: Hassanein, M. H. The Influence of Nosema Apis on the Larval Honey Bee. Annal of Applied Biology, Vol. 38,4:844-846, December 1951.

From North, East, West, and South

NORTHERN CALIFORNIA, July 1

Weather: The temperature conditions are gradually getting more normal, or at least warmer. The spring has been on the cool and dry side but with enough moisture to stimulate plant growth. The nights are still cool, favoring the growth of alfalfa, star thistle, and other plants. On the 6th there fell in many areas of northern California a general rain of varying intensity, .47 inches being recorded for this section.

Condition of Plants: The rains last fall prepared the natural seed bed for the wild plants and then a rather dry winter and periodic rains during the spring months resulted in a favorable plant growth at this time. Thistle is looking better than in a number of years and toward the foothills tarweed and even blue curl appear to be in thrifty condition. While the cool spring prevented bees from making the most of pollen and nectar sources, and brought on a dearth of extended duration, vetch, alfalfa, morning glory, and other plants produced better than usual during the later part of May and through June.

Condition of Colonies: Most colonies were destitute during a portion of the spring months because of unfavorable weather conditions, and some starvation was reported. Considerable sugar had to be fed in most areas and beekeepers were hunting for more favorable locations. Many beekeepers moved to the mountains for manzanita, but little surplus from this source was taken this year, the colonies using most of what they gathered during succeeding weeks of unfavorable weather. With the depletion of all stores, and then a sudden change for the better, swarming was reported as severe in some apiaries.

Colonies uninjured by poisons are now in generally good condition for a honey flow or for pollinating services.

Injury from Chemical Poisoning: A near epidemic of rice leaf miner caused the application of dieldrin to many thousands of acres of rice land before some semblance of organized control was inaugurated. During the early stages of application by airplane, beekeepers were not notified and spraying continued throughout the day in many sections. While bees do not visit the rice fields, mustard and other plant growth around the fields, as well as the contaminated water and direct contact with the sprays, caused the loss of the field force and reduced the hive populations by many thousands of colonies. In some cases, apiaries located adjacent to the rice fields were not injured while others were. Some colonies located at different distances from the fields were severely injured, so the effects were spotted, apparently brought about by the method or efficiency of the operations, drift, and the areas in which the bees were working. These bee losses extended throughout several rice growing counties.

In Kern County, where several thousand acres surrounding cultivated areas were sprayed with aldrin for the control of an invasion of grasshoppers, and to which cost the members of the Valley Pollination Service contributed liberally, considerable loss of bees was encountered. In a few instances, it was necessary to spray a portion of the alfalfa fields in which hives had already been located. Population losses in these instances were quite severe, even though only four ounces of aldrin was applied to the acre.

Reports of losses to colony populations from dieldrin applied to citrus in Tulare and Orange Counties in the south have been received from beekeepers who moved their colonies into those areas.

From these experiences it would appear that **aldrin and dieldrin should be added to the list of chemicals which are highly toxic to pollinators** and should be more closely regulated for the benefit of all agriculture.

Honey House Standards: The committee of the California State Beekeepers' Association appointed to draw up

minimum requirements for honey houses has about completed its initial efforts and are now awaiting the action of the health authorities in approving the standards or in offering some modifications. Before they can be adopted, it is understood that the officials desire to make more inspections of honey house facilities in different portions of the state to see how the specifications can be put into effect.

While this is being done, it would seem desirable for all beekeepers and bottlers to improve their facilities where necessary to meet the minimum standards which have been listed in the bee journals during the past few months.

Bee Diseases: During the past several years, beekeepers have increased their numbers of hives to take care of the pollination needs of the state. Labor has been scarce and the inspection service in the different counties has not been able to cope with the thousands of colonies which have been moved from one portion of the state to another and concentrated in the seed areas. In many instances, robbing has been quite prevalent whenever colonies were opened. Many colonies have been short of stores, either in the spring or during the period of densest concentration. An earthquake of severe proportions caused the exposure of combs for many hours or days before beekeepers could assemble their hives. All of these factors can be cited as the cause for the apparent increase in the amount of AFB which is now showing up in some of the areas of the state.

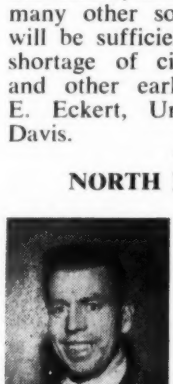
At the same time, many commercial beekeepers who inspect their colonies regularly during the year and before adding or removing supers, report no significant increase in AFB.

Careful inspection for bee diseases is the first responsibility of the beekeeper. It is easy to blame the other fellow, or sulfa, or the earthquake, or starvation conditions, but the fact remains that if each beekeeper will eliminate AFB in his own outfit, the danger of spread and the need for county inspection will be lessened.

The Honey Market: Honey is a scarce article in California and the price has stiffened to meet the demand. It is hoped that yields from alfalfa and star thistle, lima bean and cotton, and many other sources still to come in, will be sufficient to make up for the shortage of citrus, sage, buckwheat, and other early summer sources.—J. E. Eckert, University of California, Davis.

* * *

NORTH DAKOTA, July 1



Weather: Summer is well on its way with hot and cold running wet weather. Many of the fields in the Red River Valley are sad-l o o k i n g from floods right now. It reminds me of an old Scandinavian neighbor of ours when I was a boy. We had been harshly dealt with by a hail storm. We drove over to this neighbor's farm to extend sympathy (or receive it, as the case may be). He had been pounded out completely. When we asked if he had been badly hit, he did not reply for a bit but looked off across his fields of broken hopes and slowly replied with a smile, "You know, harvest really came early this year." An example of farm fortitude.

This same fortitude is often shown by our beemen as they absorb blow after blow, such as they have received this spring, but still keep on.

Condition of Bees: The bees are coming on nicely and on the whole are well up in strength for the honey flow just starting. But it has been costly. After early warm weather started brood laying, the weather turned cool and wet. What little pollen and nectar that was available could not be gathered. A great deal of sugar feeding was necessary. Colonies low on supplies were in a bad way. Many out-apiaries were next to impossible to reach by truck because of the excessive rainfall.

Bee Pasturage: Yellow mustard furnished good supplies of nectar and pollen for colony build-ups. The wet fields also stopped farmers from spraying to kill mustard and so a larger supply than usual was available. This aided the beemen considerably. Also, many fields of sweet clover that had

been scheduled to be plowed under for a green manure crop have been left standing because of wet fields. These clover fields are just coming into bloom and should offer some excellent bee pasture before being plowed under. "It is an ill wind that blows no one good."

The sweet clover weevil hurt the sweet clover in the eastern part of the State this spring but just how badly is not yet known. A cross-country check showed a considerable amount of sweet clover blooming in road ditches. Considerable work is being done with insecticidal control but with varying degrees of success.

Honey Market: Honey is moving slowly at a steady price. Some cut-comb honey was still on the shelves in a large chain store.

Miscellaneous: From all appearances this will be the last article from North Dakota from this writer. We are to assume duties as State Entomologist of Missouri on August 1. It is hard leaving all our bee-friends in North Dakota, but it is a pleasure looking forward to making new ones in Missouri.—Julius R. Anderson, Fargo, N. Dakota.

* * *

WISCONSIN, July 7

At this time of year the beekeeper is either full of enthusiasm because he has found on his colonies a good crop of fine honey; or, he is full of despair because what looked like a promising yard turned out to be a dud—a failure often, for some unexplained reason.

In Wisconsin this year we will probably have both kinds of beekeepers. Sections of the state where rainfall, bloom of nectar plants (especially clover) was favorable, and where Nosema did not strike, have a good crop of light-colored honey.

Decreased brood rearing in April and early May because of a shortage of pollen resulted in small colony populations in June in many yards.

We had a greater loss of queens in our package bees this year from Nosema than we have had for five or six years. It amounted to a 30 percent loss of queens which died from one to three weeks after the packages were established. Dr. C. L. Farrar reported considerable Nosema infection in the bees attending the queens in the mailing cages of several lots. Nosema causes our greatest loss of honey production when it strikes.

Comments: In the July issue, page 423, Charles Mraz of Vermont, tells of his experience last year. The populations of colonies just ready for the honey flow was so small that "there just weren't any bees flying". We have had that occur off and on for many years and it can be very discouraging.

Our experience leads us to believe that Nosema is a likely cause for small populations just before the honey flow. If crawling bees are found they should be examined for Nosema spores. Other causes can, of course, be paralysis, poisoning, and poor brood rearing three or more weeks previously because of a shortage of pollen. A combination of factors, as for instance, Nosema shortening the lives of the older bees in May plus reduced brood rearing in April, can easily result in a crop failure in June even if the plants yield nectar freely. We hope research now in progress at the Bee Culture Laboratories will soon have an economical solution for these problems.

The Market: Our regular store customers are asking for new crop honey even though they have other brands on the shelves now. We bottle only the clover honey produced in June and July and sell the darker, stronger flavors to the baking trade. Of course, there are consumers who like strong flavors of honey but the larger percentage like white honey and we have increased sales and, without question, the number of honey users by providing it. We extract in July and August in order to get the honey at its best color and flavor. If the honey is left on the colonies for weeks after it is stored in combs it may absorb moisture, lose flavor, and turn darker because of weather conditions.

Winter Stores: We seldom get much surplus nectar after mid-August. Last year the flow from goldenrod and other fall flowers was fair. Not know-

ing what it might be and wishing to have the bees store more honey in the brood chambers for winter, we placed the inner covers on the brood chambers and the honey supers on them about August 15. Results were excellent. The bees carried some honey through the escape hole (left open) into the supers after storing most of it in the brood chambers. Results: We saved money and labor in feeding and lost no colonies from starvation. We are no longer able to get off-grade sugar at a reasonable price, so feeding it is unprofitable.

Cure for Stings: Mr. T. A. Potter of Baraboo, herb gardener, in a talk before a garden group this spring, told of an experience he had while visiting a prominent herb specialist in the East. This lady kept a few colonies of bees and while Mr. Potter was examining some herbs, a bee without warning, landed on his ear and stung. The sting was very painful and swelling immediately set in. However, the lady herb gardener was quite unperturbed. She went to a plant of **Winter Savory,** picked a handful of leaves, crushed them in her hands and asked Mr. Potter to hold the crushed herb against his ear. He reports quick relief of pain and swelling. We won't vouch for this method helping everyone as we have not tried it ourselves, but — try it sometime.—H. J. Rahmlow, Madison, Wisconsin.

* * *

MICHIGAN, July 2

The Season: For the second year in a row practically no surplus honey was gathered from fruit bloom and dandelion during May. Bloom was very profuse but the weather was not satisfactory for bee flights. This flow can be quite heavy in Michigan some years and a surplus is important to carry the bees through until clover time with plenty of food. The main flow started locally June 16 and recent rains may extend it for some time.

Honey Crops and Honey Plants. In order to make a profit from his business a beekeeper must get a certain minimum crop which will vary somewhat with his cost of production and selling price. Even though the ability of the beekeeper to produce a crop varies greatly in any given area the presence of suitable honey plants largely determines whether an area will be commercially profitable or not. Areas such as parts of the Red River valley point out the truth of this statement. Back 15 to 25 years ago, beekeepers, many with no experience, were getting crops of 200 to 400 pounds per colony from the acres and acres of sweet clover, both wild and cultivated. Crops in some of these same areas have been well under 100 pounds per colony in recent years. The former large acreage of sweet clover has disappeared partly due to the sweet clover weevil but also due to changed agricultural practices. There have been many other examples of extreme changes in yields with changes in the presence of honey plants.

Without depreciating at all the value of proper management the great problem facing many commercial honey producers is how to maintain adequate honey plants in their area. For the commercial man who has built a home and an expensively equipped honey house it is not easy to move when an area depreciates and the crop is no longer of commercial size. What is the right thing for a beekeeper to do under those circumstances? Should he sell out and do something else; should he reduce his colonies to a sideline and do other work in the winters; or is there any way in which he can influence farmers to plant for him, or are there other ways to boost the presence of honey plants?

In Michigan there is some tendency to blame the College or the Extension Service for the fact that farmers are advised to cut hay before bloom. It is disheartening to see beautiful stands of legumes cut before bees can touch them but it is contrary to human nature and probably foolish to expect a farmer to even slightly affect his personal interest for the beekeepers' good. I know this practice is based on sound information as to the food value of the hay or silage. Agricultural research has lead to greatly expanded ability to

produce food for the world's rapidly expanding population and as far as I can see research provides the only hope of feeding the world's millions in the future. This is true in spite of the food surpluses which easily accumulate in the United States and Canada at the present time. Food shortage could have been prevalent on this continent even now had not research developed rust resistant wheat, hybrid corn, insect control, machinery, electric power, etc., etc. Individual beekeepers might well persuade some of the neighbor farmers to delay the cutting of clover fields for the benefit of bees but if we are going to fight early cutting of hay as a general practice by all farmers we will have to prove that late cut hay has superior value under certain circumstances.

It may be that the executive or committees of beekeepers' associations should be making far more contact with Farm Crops departments of State Colleges. Probably there are ways in which farm practices could be influenced to our benefit. A word of suggestion; If such contacts are made, one explosive meeting laying bare all the woes of beekeeping and then several years of silence won't do any good. The industry will be heard and appreciated and understood best by business-like contacts, whether with Farm Crops departments or with representatives of other branches of agriculture. A good committee or even an individual representative of the beekeeping industry, could have considerable influence through occasional meetings with directors of Experiment Stations and Extension Services. Such things as recommended pasture mixtures, date of cutting hay, promotion of seed production, roadside and other plantings might well be influenced to benefit the industry with contacts and action anticipating not an immediate bonanza but a long-time influence on a fundamental thing—honey plants.

Tri-state Meeting: Michigan, Ohio, and Indiana on August 7th and 8th, at Pokagon Park and Angola. Look up the details in July Gleanings. Which of the three states can muster the best turn-out? I expect it will be Michigan.—E. C. Martin, Michigan State College, East Lansing, Michigan.

OHIO, July 2

Weather: My last report was on February 3, 1953, and that snow-covered ground we hoped for then did not materialize here in Ohio and was also a scarce article in many sections of the United States. Ohio, at this writing, like many other states, is very short on precipitation—even a little short for the month of June. Crops are suffering for the lack of moisture in many sections of the state. As this is being written the temperature is 98 degrees. **Whew!**

Ohio finally shared with some of the other states and we had a couple of quite severe tornadoes with the loss of many lives and property damage into the millions of dollars.

Bees: Neglect on the part of management caused some starvation during March, April, and May. There was very little, if any, winter loss. The latter part of April and most of May was cool with overcast skies. This caused the dandelion flow to pass with very little nectar or pollen collected by the bees. Feeding again was necessary. Many beekeepers fed dry sugar with fair results. By the time the real honey flow arrived stores in many colonies were close to the vanishing point. Good beekeepers did a lot of requeening this spring.

This spring considerable European foul brood appeared in some sections of the state. Requeening usually clears this up but in several instances it appeared again. Why? We all have our own ideas about this but I doubt if anyone really knows.

A large amount of spraying has been done over the state to stop the march of the Army Worm on farm crops. This was also detrimental to the entire field force of bees in adjoining bee yards.

Plant Conditions: By personal observation and reports from others, the condition of clovers over the state is generally very good. However, during the past ten days many large fields have been harvested. Alsike and alfalfa are in great abundance. Not so

much ladino this year. Bird'sfoot trefoil is becoming a favorite with many farmers. Yellow sweet clover is mixed with alsike in many clover fields. Our reliable and dependable white sweet clover is staging a comeback wherever it is given a chance.

Miscellaneous: There is one positive way for a beekeeper to get up in this world. This was done by one Edmund Hillary, a six foot three inch beekeeper from New Zealand. He successfully climbed to the top of Mount Everest, the world's highest mountain. It is 29,002 feet above sea level. Hillary reached his goal May 29, 1953. This is a record for beekeepers to aim at. I'll bet he had neither bee veil nor hive tool with him. Now the $64 question is—"How can the beekeepers of America reach a higher goal than Hillary of New Zealand?" If you are honest with yourself, your family, your fellow beekeepers, and all others, and if you live a good honorable Christian life, in the due course of time you may get a first class passage, without any stopovers, to a place much higher and more desirable than Mount Everest.

It might be profitable for you to turn to page 437 of the July issue of Gleanings in Bee Culture and take another look at the picture of one of Mr. Hillary's apiaries. Just notice the neatness of the yard and the arrangement of his colonies. How do your apiaries compare in neatness?

Beekeepers in each locality of the U.S.A. each year have to encounter and overcome many new problems and difficulties such as tornadoes, wind storms, floods, drouths, sand storms, hot winds, crop failures, water shortages in irrigation districts, spray poisoning, labor shortages, and many more including family and financial troubles. Still the uninformed "city slicker" is of the opinion that a beekeeper has no overhead expenses and all he has to do is to take off the honey and get the cash for it and the bees do all the work. How nice if that could be true. However, there is a little more than that to it but, good luck or bad, the beekeeper is always loaded with optimism and looks ahead into the future (which is a very fine and noble characteristic).

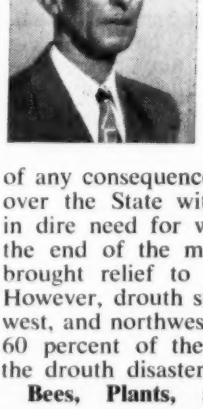
Farmers, truck gardeners, and orchardists have to overcome many of the difficulties that beekeepers do and in addition this year there is the Army worm, the cicada—commonly called the 17 year locust (but it is not a locust), aphid, and spittle bug. Spraying is done extensively now to control all these pests. If it were better understood we might be doing much future damage by these powerful sprays. Powerful as they are, some insects withstand them and survive. These insects give rise to generations of hardier types of insect pests. Stronger sprays will be needed to destroy them. In administering these strong insecticides man's own life may be endangered to say nothing of the poor honey bee.

Now, the tachina fly is a parasite which kills the Army worms and the lady bug kills the aphids so why not give more attention to the breeding of beneficial insects? For several years, entomologists have believed that the best destructive force against insect pests is **other insects.**

Nature usually precedes invention. Thousands of years before man began to have afternoon headaches from trying to think, the slow motion tortoise had a streamlined body, turret top, retractable landing gear, and a portable house. How much can we learn from nature?—W. A. Coulter, Columbus, Ohio.

* * *

TEXAS, July 6



Weather: Generally high temperature prevailed over Texas during June with many points reporting record high temperatures. Drying winds accelerated loss of soil moisture. During most of the month, no rainfall of any consequence occurred anywhere over the State with crops everywhere in dire need for water. Then, toward the end of the month, heavy rainfall brought relief to much of the State. However, drouth still prevails in south, west, and northwest sections with about 60 percent of the State remaining in the drouth disaster area.

Bees, Plants, and Honey Crop:

Throughout most of the extensive beekeeping sections there was at least a moderate honey flow during June. Colonies which passed the dearth during May now have a crop of honey on the hives and extracting is now in progress. Weak colonies built up on the flow without gathering any surplus honey. Mesquite bloomed heavily over most of its range and several areas obtained some surplus from this source. Horsemint varied widely in its occurrence with favored localities in southeast Texas obtaining up to 100 pounds average gains per hive. The market for horsemint honey, however, is limited to localities where consumers are accustomed to it. In the blackland area a good portion of the early crop came from marigold. Sweet clover generally yielded below the usual average, due to drouth and the manner in which the crop was handled. Most of the acreage was utilized for pasture and hay. In northern portions where rain came in due time, sweet clover continues in bloom with some localities reporting a heavy crop. The vetch crop varied widely with anthracnose taking a heavy toll during the blooming period. Most well drained fields escaped the disease. There was an abundance of bloom which yielded a good crop of honey and seed. Throughout the principal beekeeping sections the honey crop thus far is below normal in amount, from mixed sources with wild flowers predominating. There is as yet little indication of the honey crop from cotton. In the southern portion of the blackland area the bloom has started with no reports available as to nectar yield.

Market: Considerable honey of the current crop is now coming on the retail market. The quality has been generally good at prices which prevailed last year. Thus far the best grades of white extracted and comb honey are in short supply.

Miscellaneous: Bees have been largely moved out of the Lower Rio Grande Valley to other sections, consequently, there has been no report of poisoning of bees or nectar production from cotton.

This area, like others, has very limited supplies of water for irrigation. Falcon Dam on the Rio Grande, now under construction with a capacity of more than two million acre-feet is slated for completion this fall. It will require many months to fill this reservoir. With normal rainfall Texas receives enough water for domestic, agricultural, and industrial needs when properly stored and conserved. However, we need a return of normal rainfall to break the prolonged drouth and fill our reservoirs until additional storage facilities are provided.

In general, beekeeping follows the trend of other agricultural enterprises. While some of our native southwestern plants produce honey under extremely dry conditions, beekeeping is becoming more dependent on cultivated crop plants.—A. H. Alex, College Station, Texas.

* * *

KENTUCKY, July 6

Weather: Because of a warm winter colonies built up rapidly in March and early April. Since consumption of stores was excessive and many colonies reared brood nearly all winter considerable spring feeding was necessary. Many hives were lost from starvation. There was an epidemic of early swarming in April which ended rather abruptly when the weather turned cold and rainy for a period of at least six weeks. There were only three days during one four-week period in which rain did not fall. As a result, bees could fly very little and swarming practically ceased. Hives that were not fed were often badly starved and some beekeepers reported their bees carrying out dead brood. By the first of June the weather turned hot and dry and has remained so with only occasional showers ever since.

Honey Plants: In spite of the extensive drought in 1952, honey plants have made a good growth this spring and bloomed normally. Redbud bloomed over a long period but bees were not able to work it adequately during the wet weather. Black locust

bloomed the second week of May but as usual the season was over in a week or ten days and very little surplus was stored. Yellow sweet clover, our first major honey plant, bloomed from May 25 to June 15 but was not as abundant as it should have been, probably because of the effects of the drought. However, white Dutch clover, our mainstay, seems to have survived from the previous dry weather and has sprung up in great patches. In Louisville where considerable clover seed is usually used in lawn seeding, bluegrass appeared to die out and leave the clover. The season for this species has been unusually long and it is still blooming extensively in early July. White sweet clover was later than usual coming into bloom about the middle of June and is still in the height of its season. In a recent trip across northern Kentucky, I found white sweet clover planted in several areas, its sweet fragrance announcing its presence from a distance. In the eastern mountains sourwood (**Oxydendrum arboreum**) is now in bloom where it produces a small surplus. Only lack of bees in these areas prevents it from becoming a more important species. This is an attractive tree which should be more extensively planted for ornament in parks, along roadsides, and around apiaries. Bluevine often called sandvine and vining milkweed (**Ampelamus albidus**) is just coming into bloom, but this important honey plant is not well known in Kentucky. It is important chiefly in the lower valleys of the Ohio and Missouri Rivers and their tributaries. It often takes over cornfields in river valleys, although the new weed sprayers have greatly reduced it in importance. It produces a white honey with a good flavor.

The Crop: The prospects for a good crop this year are favorable. Although very little honey has been harvested as yet, many beekeepers report that from one to two shallow supers have been stored and that exceptional hives have already produced 100 pounds or more. June honey is nearly always extra light amber to white in this area since it is obtained almost exclusively from the clovers. Occasionally it is darkened by the nectar from tulip tree but this tree is not a major species in most of the state. There was so little honey stored in 1952 that few beekeepers carried any into the winter. "Honey for Sale" signs have been removed from many roadside apiaries. One large dealer purchased honey by the truck load in Nebraska, and another obtained his in Ohio.

Miscellaneous: A small amount of American foul brood has shown up again this spring, but the more progressive beekeepers are alert for it and quickly burn the contents of infected hives. Many are still feeding sulfur in the spring and feel that this is a safeguard even though it is no longer recognized to be a cure. An eight-frame observation hive was displayed on a television program recently. All the frames were mounted in the same plane and fully exposed through plate glass windows. This same hive was also on display at a hobby show and attracted a lot of attention. Many visitors, who examined it, said that they were small beekeepers but had never made any contacts with local or national bee associations. Another television program was devoted entirely to the uses of honey, and the wife of a beekeeper baked a honey cake as part of the program.—Harvey B. Lovell, Biology Dept., Louisville, Ky.

* * *

NEW YORK, July 8

Weather: The early part of June was wet in most of New York State and honey plants were in fine shape. Two days of exceptionally warm weather in the middle of June followed by cool weather seemed to have affected the secretion of nectar which was good until that time. The rains stopped for the most part the latter part of June and the first days in July. This may have also affected the prospects for a crop.

Condition of Bees: The winter for most of New York was mild, and the bees having stored a good fall crop wintered very well. So far as is known little feeding was necessary this year. Swarming was severe in many parts of the state because of the strong con-

dition of the bees and plenty of early bloom when there was a surplus of moisture.

Crop Prospects: Prospects for a crop looked good until the latter part of June. The Finger Lakes region suffered with the rest of the state because of too little rain, and prospects for a large crop of light honey are poor. Northern New York needed rain as of July first to obtain a good crop of light honey but rain has been reported from that area the past few days though it may be too late. Conditions are normal in the Hudson Valley with the chance of a fair crop. The Albany area and north of Albany was very dry and yielding no honey about July first, and the rains lately are probably not in time for a good crop.

Miscellaneous: The summer meeting of the New York Beekeepers' Association will be held at the Genesee Valley Park near Rochester on August 15. Dr. Eva Crane who has been active in beekeeping for some time in England will be the principal speaker. Dr. Crane succeeded Miss Betts as editor of the Bee World.

Dr. Otto Morgenthaler who has recently retired as head of the Bee Research Laboratory at Liebefeld, Switzerland, will be present at the meeting. Dr. Morgenthaler is known world wide for his research in the field of Apiculture and also as a practical beekeeper. A large number of beekeepers have expressed an interest in the summer picnic and a large turnout is expected. —Roger A. Morse, Ithaca, N. Y.

HONEY WINE AND VINEGAR

(Continued from page 461)

There are two beekeepers who make and sell about 4,000 hectoliters each year. No production figures are available for the amount produced in Belgium.

Details of the methods of production are lacking, but we do have some indication as to the type of wines produced in each country. Gayre (1948) states: "The bouquet of mead brings it near to that group of French white wines represented by Moselles, although at times it comes near to the drier Sauternes. Like these wines, it can range from a sweet to a dry wine according to the original sugar content of the must (the unfermented honey water mixture), to the development of age, and to the degree of fermentation. . . . The sparkling variety of mead tends to be a little lighter, as might be expected, than the still variety."

Both a honey wine and a honey fruit wine are produced in Costa Rica. Some of the honey fruit wine is made with a honey-orange juice base and the rest with other available fruits. The producer there plans to include the use of bananas in the wine in the future.

During World War II, the Production and Marketing Administration authorized the use of 900,000 pounds of honey for the manufacturing of wine by five firms in this country. Whether this much honey was actually used and what types of wines were produced is not known.

After the war, about ten companies in the United States used honey to produce various types of wine. In many cases the recipes for these wines included fruit juices, cane sugar, and hops. Much of this wine was produced for sacramental purposes for the Jewish trade. It is estimated by one honey wine producer in New York State that about 100,000 bottles of honey wine per year were produced for sale in 1948, 1949, and 1950. In 1951, production fell off to 50,000 bottles. Probably the difficulty in complying with government standards was responsible for the decline.

So far as is known, honey vinegar is not produced commercially in this country or elsewhere.

There have been numerous persons interested in the production of honey wine during the past few decades. Many papers and a few books have been published. Listed below are the more outstanding of these which have appeared both in this country and in Europe.

Beck Bodog F.
1938. Honey and Health. pp. 122-33.
Bertullo, W. A. and Etchancy, A. M.
1943. Comparative fermentation of honey with wine yeast and beer yeast. (Translated title) Rev. Assoc. Ing. Agron. 15:71-3.
Betts, Annie D.
1932. Nectar yeasts. Bee World 13:115.
Fabian, F. W.
(Continued on page 508)

From the Field of Experience

They Didn't Kill Her

By Arthur White, Jackson, Michigan

I WAS ABOUT halfway through checking a yard of 60 or so hives, when I came onto this balling of the queen that I had read so much about, and what nobody seems to have the answer to. Not even the editors of the large bee books seem to know why. But this is what I witnessed.

I opened this particular hive the same as I have opened hundreds of others. I don't spend too much time on a hive, and I work carefully with as little disturbance as possible. It was early May, and there were not too many bees in this hive—about a good double handful.

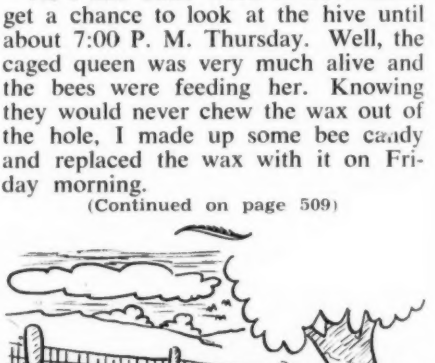
There was some brood and a fair pattern of eggs. A few cells had two eggs, but not enough to indicate a laying worker. Curious, I took time to look for the queen, but I couldn't find her. I left the hive open and went on with my work. I came back to this particular hive twice, but still I couldn't find the queen. I finished the yard and decided to take one more look. You know how it is, some little thing will arouse your curiosity, and you can't leave it alone. Still failing to find her, I picked up the hive (a single body) and set it over a strong colony. Walking back to put the cover on the bottom board, I then spied the ball of bees on the bottom board. I watched for a few minutes and then started to smoke them apart. They were certainly stickers. I finally got to the center of the ball and found the queen. I expected to find her dead, but instead, she started running around and didn't seem any the worse for her experience.

Wondering what would happen if I put her back in the hive that I had just taken away, I carried her over and put her on a frame of brood with bees. They didn't seem to bother her, but when I carried the hive back they balled her again. I then decided to try something else. I picked up the queen and caged her. I then dunked her in some anise-flavored sugar syrup I had in the yard. I then placed her (all sticky) back in the hive. They balled her again. I watched for a few minutes and decided to let nature take its course. Frankly, I didn't think she could survive. She could hardly crawl. She sure looked washed up.

This was on Tuesday. Wednesday, I was back in the yard so I decided to look the situation over and see if there was still a queen in there. Sure enough she was still there and very much alive. She wasn't being balled, but bees were chasing her and climbing on her back. There was one bee that stuck to her back like a burr to a dog's tail. She acted like she was trying to sting the queen. I picked her off and pinched her head, but another one immediately climbed on. Picking the queen up again, I caged her the second time, and stuck a piece of wax in the hole and hung her between the frames.

As I had other work to do I didn't get a chance to look at the hive until about 7:00 P. M. Thursday. Well, the caged queen was very much alive and the bees were feeding her. Knowing they would never chew the wax out of the hole, I made up some bee candy and replaced the wax with it on Friday morning.

(Continued on page 509)



"It might be a temper tantrum; on th' other hand, there could be a bee in his pants!"

Hiving Swarms

By Clarence C. Wilson, Berkeley, California

WHEN a swarm is on the ground or in the grass, I have found that a frame of drawn comb will attract the bees, which can then be shaken or brushed from this frame directly into a hive. I usually take out two frames from the middle of the hive before hiving the swarm.

If the swarm is high up in a tree then I make use of a plywood box that came with some wax foundation. This box is nailed to a one by two inch stick that is about seven feet long which in turn is bolted to another piece of wood of the same size and length. By hoisting the box under the swarm and then giving a vigorous shake, most of the bees will fall into the box. Then the box is lowered and the bees are dumped into a hive from which the middle frames have previously been removed.

I find that if a frame of drawn comb is next to the open space the swarm will be more likely to stay in the hive. When I hive a couple of swarms in a cold rain, I put a few frames of honey in with them to help out.

Carbolic Acid Can Cause Trouble

By Roger A. Morse, Ithaca, New York

SOME BEEKEEPERS in New York State occasionally run into trouble when they use pure carbolic acid to remove a crop of honey. By using the proper precautions, however, damage to honey can be avoided.

Carbolic acid pads should not be left on supers more than 10 to 15 minutes, or just long enough to drive the bees out of the super. When the top super is empty of bees it should be taken off and the pad placed on the super below.

A few puffs of smoke on top of the super before the pad is put on will help to give the bees a good start downward. On very warm days beekeepers have reported difficulties—the bees seemed to be stunned and won't move. In this case the carbolic is volatilizing too fast and if the pad is staggered on the super it will work very well under those conditions.

Poor success is usually encountered when an attempt is made to drive bees through an excluder. And it is best to drive the bees from only one super at a time.

Since the height of the pad above the super might also be a factor in driving bees downward, the rim of the pad should be two inches deep.

Alfalfa Pollination in Kansas

By Dr. R. L. Parker, Kansas State College, Manhattan

RESEARCH AT Manhattan and Hays, Kansas, has shown that the leaf-cutter bees are far more efficient than honey bees in carrying out pollination of alfalfa. The number of leaf-cutter bees are extremely low and thus are not as effective as the honey bee with its vast numbers of bees in the field.

The job of controlling injurious insects during the prebloom period and then the effect of the beneficial insects during blooming, has made a tremendous increase in the pounds of seed per acre.

There is another factor in the production of seed, in that present harvesting machinery is not efficient or effective in obtaining all the seed available. There is much need for improvement in harvesting and handling methods as well as harvesting machinery. Some farmers reported that they could go over the ground following a crop harvester and obtain at least as much seed as was obtained through the crop harvester.

Future studies of this problem will undoubtedly bring forth much more information than we have at the present time in regard to pollination and seed production of alfalfa.

Tricks in Rendering Beeswax

A GOOD WAY to remove beeswax from combs and various forms of residue is by means of a press operated under hot water, according to Dr. W. L. Coggshall of the Cornell Agricultural Experiment Station. Reporting on his work with beeswax, Coggshall pointed out that continuous pressure, applied by hydraulic cylinders or heavy screws, to thin layers of wax-bearing solids is most effective.

"The time element is important in the process. The longer continuous pressure is kept up the more complete is the removal of wax. If other conditions are met, a time interval of about 10 hours should result in the dried press-cake having less than 2.5 percent of imprisoned wax, while a reduction in time of even three hours may result in the cake containing 10 percent or more wax."

While acids are not recommended for small scale wax rendering operations, they are fairly effective, especially in reducing color stains of wax by iron rendering equipment.

After comparing three acids previously considered satisfactory for use in clarifying beeswax, Dr. Coggshall found oxalic acid to be the most satisfactory for improving the color. He also noted that with continuous stirring of the oxalic acid solution for only ten minutes it appeared to give as good or better results than contact for longer periods.

While tests using ortho-phosphoric acid were satisfactory as far as color is concerned, with intermittent stirring it required 41 hours to accomplish results that oxalic acid treatment produced in six hours. Results with sulfuric acid were much inferior to those of the other two acids.

Oxalic acid solutions are fairly easy to use with beeswax and should prove to be an economical treatment, since preliminary work indicated that oxalic acid crystals may be recovered for later use. Glass-lined tanks are recommended for handling hot oxalic acid solutions, since this acid corrodes certain stainless steels and some other metals.

"The yellow color so characteristic of many crude beeswaxes is a contamination of pure scale wax," Professor Coggshall said. "In some cases," he added, "the yellow oil found on the surface of pollen grains from a number of species of plants causes this odor. Oil from pollen grains that come in contact with occasional wax scales, before the scales are removed and used by the bee, diffuse into the solid wax."

Propolis is another prominent source of yellow color in beeswax, and the combination of other contaminants with propolis and pollen results in the color of the beeswax being intensified during the application of heat incident to rendering.

Reference: Coggshall, W. L., 1949 (Sept.) Beeswax, 162 pages. Unpublished Thesis, Cornell Univ., Ithaca, N.Y.

Short Cuts in Requeening

By S. C. Squires, Chapel Hill, North Carolina

I FOUND a colony in one of my outyards that was queenless and had laying workers, so I brought them to my home yard. There I intended to dump the bees out, away from their location, and move the hive back to the old location and requeen in the regular way. But being too busy with my regular work, plus queen rearing, there wasn't enough spare time to do it.

Just then one of my own queens wasn't laying too well and because I needed a place to place some cells I decided to remove the queen from the nucleus. The queen was replaced with a cell. Not having anything better to do with the queen I simply picked her up by the wings from the comb in the nucleus and placed her on the alighting board of the queenless colony with the laying workers. A few of the bees came rushing out and followed the queen into the hive. She apparently started to lay at once, and I saw no more of the laying workers.

Post-Mortem on Package Bees

By E. C. Martin, Michigan State College, East Lansing

THE MORTALITY in package bees is often much higher than it should be. The U.S.D.A. semi-monthly honey report of May 1, 1953 states that losses in package colonies were heavy this spring. The statement is made that in one location in Ohio, examination of 100 three-pound packages showed a 50 percent loss from cold, a severe loss. When the present high express charge is added to the price of the package this certainly is a severe loss.

Such losses are not restricted to Ohio nor to 1953. Losses are fairly common in many areas each year. An experienced Michigan beekeeper told me that he installed 50 packages a few years ago and lost every one of them from cold. In discussing this matter at spring meetings many others admitted past losses.

Bees Installed on Foundation are Perishable

Much of this loss, in my opinion, is due to the fact that we do not distinguish between packages installed on dry foundation, those installed on dry combs, and those installed on combs with honey and pollen. Data on the correct date for installing package bees is not complete unless these distinctions are made. Package bees installed on combs of honey during freezing wintry weather will often thrive. If the same packages were installed on foundation during the same period they would be dead in a few days. The reason, of course, is that the bees on combs can live on the honey adjacent to their cluster in the same manner as wintered-over colonies. Bees on foundation will not leave the cluster to travel to the syrup supply and so they starve in the cluster.

Our literature on package bees has failed to make this distinction when recommending dates for installing package bees. Beginners in beekeeping normally install package bees on foundation, and because the literature on installing dates is not specific, such packages are often installed too early and die. The beginner then goes to the other extreme and orders and advocates ordering packages too late and sometimes continues to purchase packages too late even when installed on drawn combs with honey.

Packages Should Be Installed Early

In order to get a honey crop the first year, packages should be installed as early in the spring as local weather conditions will allow. Beekeepers are commonly advised to purchase packages eight to ten weeks before the main honey flow. In Michigan this would mean during the first week of April. This date has proven satisfactory for packages hived on drawn comb containing honey and pollen.

Observations in Michigan

During the past three years, packages have been installed at East Lansing on dates ranging from April 4 to May 7, some on foundation and some on drawn combs with honey. Packages have been killed by cold on dates up to the middle of April when installed on foundation. Examination of weather data for years back indicates that weather has been fairly normal during the period of observation. One comment on a weather peculiarity of Michigan should be kept in mind. That is that the amount of sunshine is very low in April. Lacking sunshine, hives do not become warmed during the day. Beekeepers in areas of higher sunshine could install packages on foundation successfully at an earlier date than here, even though the mean temperature was lower.

For Michigan conditions we suggest that packages may be installed on drawn combs with honey and pollen in early April. If installed on foundation we suggest April 20 to May 1, with colder areas choosing the latter part of this period. We consider it better to sacrifice some of the build-up period in order to reduce the possibility of severe losses. We feel that much of the confusion with regard to the best installing dates, and considerable actual loss, could be prevented by always distinguishing between packages installed on foundation and those installed on drawn comb with honey and pollen.

It's Been a Long Time

By J. W. Admire, Council Grove, Kansas

I HAVE been inspecting bees for quite some time for the State of Kansas and prior to my work with the State I have worked with the beekeepers wherever I lived to help inspect and clean up their yards.

My work has proved to me that we do not adhere to the laws in Kansas covering the bee business. Section 2-417 of the Kansas Bee Law requires that any one keeping bees must keep them in moveable-frame hives.

In my inspection work I think it would be safe to say that 60 percent of the bees are in boxes or home-made hives, with slats nailed in to build their combs on. I found one place where the man said he had four hives and some bees in a barrel. None of the hives were so the frames could be taken out. Yes, he had standard frames, but no foundation had been used so the bees just took the short cut and built their combs cross the frames. I did not see the barrel he talked about, and when asked about it he said, "Oh it's out in the orchard but you can't see in it either". I said, "Well I would like to take a look any way." So we went out, and there it was. Believe it or not, it was so full of honey I could hardly shake it. The bees were going and coming from the bung hole. These bees had been in the 60-gallon barrel for five or six years.

Well, what do I do when I find these conditions? I tell the owner about the inspection law and ask him to try and clean up so when the inspector comes around next time he can lift out the frames and inspect the brood. What happens? When I go around next year, nothing has been done and he doesn't like it very well if I refresh his memory on what he was asked to do a year ago. This same fellow, if he is a farmer, and some disease strikes his live stock, can't get the veterinarian quickly enough.

I have been handling bees for 40 years and have moved around quite a bit since I lived at Hiawatha, Kansas, where I took the picture shown in the July issue on page 412. I now live at Council Grove, Kansas. I have lived in Missouri and Nebraska, and any place I have lived there was AFB. It has been a long time since that picture was made, but how much have we accomplished toward getting rid of AFB in this country? Take a good look at that picture. If you have never seen AFB or had any among your own bees, look at these combs and you can visualize how quickly a colony can be destroyed by the young bees not hatching and the combs being clogged so the queen has no room to lay.

The person who has just a few stands of bees is more apt to neglect them than any one else. If he doesn't get any honey from them, he more than likely thinks there are not enough flowers, or it is just a bad season. So he lets them go, and often that is when the disease gets started.

Disaster Strikes Sioux Honey Association Plant

WE WERE SHOCKED to learn of the misfortune that struck the main plant of the Sioux City Honey Association at Sioux City, Iowa, when the Floyd River overflooded in June. It evidently happened very fast, for the first floor of the honey plant was under eight feet of water by noon of the next day. Since the building stood on a four-foot foundation, the flood waters actually reached a height of 12 feet.

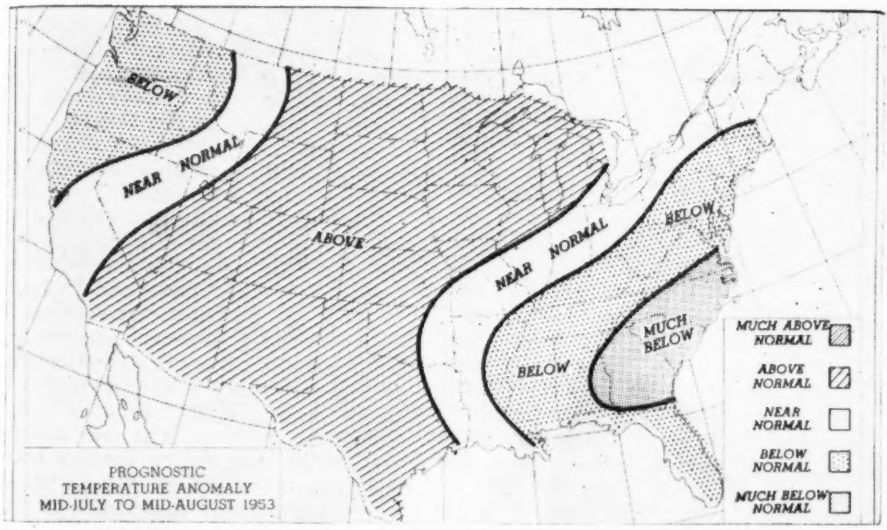
As if the damage from mud and water were not enough, escaping oil from an oil plant above the Sioux Association, was deposited within the honey processing plant and warehouse.

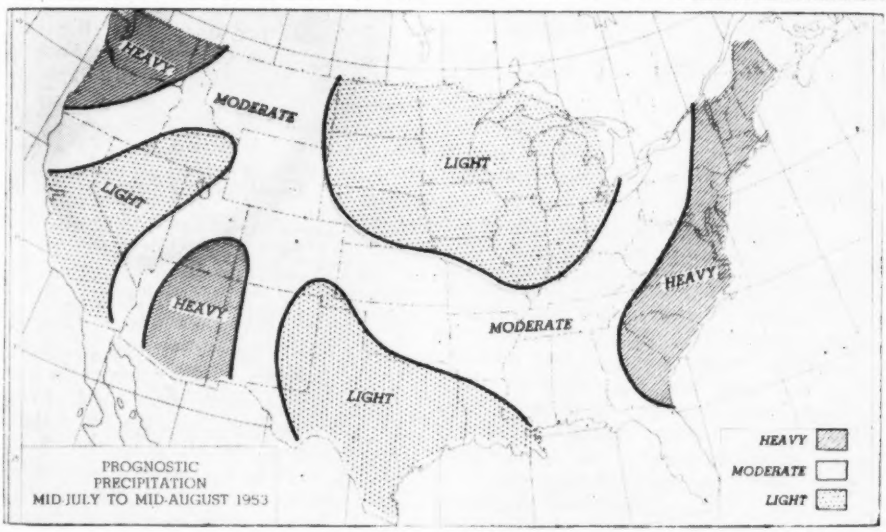
Stored in the basement of the Co-op were about a million pounds of honey while a large amount of supplies and other materials were kept on the first floor. These included bee supplies, tires, antifreeze, and the steel honey processing equipment recently purchased from a former honey marketing cooperative at Mt. Sterling, Illinois.

The latest reports from the disaster site inform us that the management of the Sioux Association plans to have the plant back in operation in August.

Average Monthly Weather Resume and Outlook

U. S. Department of Commerce, Sinclair Weeks, Secretary
Weather Bureau, F. W. Reichelderfer, Chief





The above charts for the United States show for the next 30 days, the expected departures from normal temperatures and the expected total precipitation by means of classes.

CAUTIONARY NOTE: The 30-day Outlook given here is not a specific forecast in the usual meteorological sense, but is an estimate of the average rainfall and temperature for the next 30 days based upon the best indications now available. For more specific predictions subscribers should look to the local forecasts published by the nearest Weather Bureau office. Daily local forecasts are limited to approximately 36 to 48 hours in advance; more general 5-day forecasts are made twice a week. The Outlook will be most useful when interpreted and applied by an expert. In any case, it should be kept in mind that nearly always there are changes in the weather every few days, sometimes of a sudden and severe nature.

Asked & Answered

Requeening Without Dequeening

Question: If I introduce a ripe queen-cell one to three days before the queen is ready to emerge, the cell being in a spiral cell protector with the ends only exposed, will the new queen be accepted and the old queen disappear? If this will work out it is an easy way to requeen.—Calif.

Answer: If a ripe queen-cell is given to a colony that already has a queen, the young queen will be killed soon after she emerges even though the cell is put into a queen-cell protector. Under some conditions, however, the plan you suggest will result in the old queen being killed. This is especially true with colonies that are about to supersede their queen. The plan you mention has been tried in various ways during the past 50 years. Some one suggested that the sting of the old queen be clipped at the time her wings are clipped, then when she is to be superseded a young queen could be put into the hive since the old queen would not be able to sting her rival. This does not work out in practice probably because the worker bees take the matter in hand and kill the intruder instead of depending upon the queen to do this.

* * * * *

Can Commercial Honey Carry American Foulbrood?

Question: Can honey put up in bottles and tin cans carry the germs of AFB?—O.

Answer: Of course it is possible that the germs of American foulbrood could be so carried in market containers but not probable. Robber bees could, of course, get to the unwashed containers on dump heaps and lick up the smear of honey and carry it to their hives; but even if they did, it is probable that no infection would be given to those colonies. In the first place commercial honey in all probability comes from hives free of disease and even if the germs are present it would take a comparatively heavy dosage of AFB germs in the honey to give it to a colony. Dr. A. P. Sturtevant, bacteriologist at the U. S. Bee Culture Laboratory at Laramie, Wyoming, conducted an elaborate series of experiments on honey that he had purchased in market containers from all over the United States. The purpose of this was to determine the spore content of AFB in honey necessary to produce infection in healthy colonies. Feeding tests showed that it took 50,000 spores of **Bacillus Larvae,** the cause of AFB, in a cubic centimeter of feed to cause infection in a colony. Smaller doses or less than this number (50,000) would not give American foulbrood to a colony. It is altogether unlikely that any commercial honey would contain even this minimum of spores necessary to cause the spread of foulbrood. It is therefore apparent that commercial honey is not the means by which American foulbrood is spread from state to state. The real cause is careless or ignorant beekeepers or an insufficient number of bee inspectors to cover a territory where AFB is present. It is apparent that any laws that tend to hamper or prevent the interstate shipments of honey are both unnecessary and dangerous — dangerous because they put a scare into the public.

* * * * *

Honey for Diabetes

Question: I am getting quite a few inquiries about tupelo honey as a food value and its safety as a sweet for use by those who suffer from diabetes. If you have anything authentic from doctors or dietitians on the subject of tupelo honey for the use of diabetic patients I would appreciate it very much.—West Virginia.

Answer: Honey is being used by some diabetics in very moderate quantities, with most beneficial results. Much, of course, depends upon the individual and the stage of the disease. If the case is far advanced, probably no form of sweet, even honey, can be used. In any event, we strongly advise everyone suffering from diabetes mellitus to try out a little honey, preferably tupelo, mountain sage, or sourwood, in very moderate quantities, and always under the direction of a competent physician. If sugar shows in the urine, or in the blood, then cut down the quantity of honey taken, or drop it altogether. A physician will be able to advise on this point. You will find this question discussed fully and elaborately by Dr. Bodog F. Beck, in

his book, "Honey and Health". He recommends tupelo, mountain sage, or sourwood honeys, all of which are high in levulose and low in dextrose. Physicians have found that patients can take pure levulose when they cannot take ordinary sugar. As honey contains large quantities of levulose it is more easily assimilated by a diabetic than ordinary sugar.—E. R. Root.

* * * * *

How to Know When Bees are Robbing

Question: How may I know when bees are robbing?—Minnesota.

Answer: When bees are working in the field there will be a quiet, contented hum that is very different from the excited high keynote that one hears when bees are robbing. At such times they are almost sure to be cross, and when robbing is allowed to continue they may sting not only human beings but domestic animals. A careful examination of the apiary and surroundings may show that the bees are either robbing some hive or hives, or have got into the honeyhouse or kitchen, and are helping themselves to sweets. In the case of the buildings, the doors should be closed immediately. Toward night they can be opened, allowing the robbers to go back home. But doors should be kept carefully closed the next day and thereafter, because the robbers will come back. If the bees are robbing some colony or colonies there will be found more or less fighting at the entrances. Some bees will be stung to death; and after the colony is overpowered, robbers will rush in and out at a terrific rate. There will be a general uproar in the apiary; and if these conditions continue, other colonies, that perhaps are not as strong as they should be, will be robbed and possibly overpowered.

* * * * *

Size of Food Chamber

Question: Which do you think is better, the half-depth super or the regular full-depth extracting super? Also, should ten frames be used in the regular ten-frame food chamber or should they be spaced wider, using only eight or nine frames? —New York.

Answer: In some localities the half-depth supers may be large enough when used as food chambers, but in other localities it does not hold enough honey for safety during some seasons. Where there is a dependable fall honey flow, no doubt the half-depth super will be large enough. But in many localities the fall honey flow is not dependable every year and in such cases a full-depth food chamber is better. Much depends also upon the character of the honey flow. In some localities it closes abruptly, leaving the brood chamber without much honey, while in other localities it tapers off toward the close, which causes the bees to store heavily in the brood chamber. In such cases the food chamber may not be needed. Most beekeepers are now using the full-depth hive bodies as food chambers, thus having all their combs the same size.

* * * * *

Amount of Wax Required for a Pound of Honey

Question: How much wax does it require to hold a pound of honey as we find it in comb honey? Also how much honey does it take to elaborate this wax?—Calif.

Answer: It requires about one ounce of wax to hold a pound of honey as the comb is usually built in comb-honey sections. Of course, where full sheets of foundation are used in the sections this foundation weighs about one-seventh of an ounce, thus supplying one-seventh of the wax necessary to hold a pound of honey. The amount of honey consumed in the elaboration of wax is a question that has never been definitely settled by investigators. Some claim that it requires from 15 to 20 pounds of honey to make one pound of wax, while others estimate that only 7 or 8 pounds of honey are consumed for each pound of wax produced. Under some conditions the bees apparently produce wax at very little cost in honey, while under other conditions the consumption of honey in wax production appears to be enormous.

Florida Honey

Along many of the main highways in Florida there are huge, beautifully painted, colored billboards advertising the merits of Florida honey—gallberry, orange blossom, tupelo, etc. Tupelo honey, beautifully clear and light in co'or, is on sale at roadside restaurants and gift shops at $2.50 for a 5-pound jar. Florida seems conscious of its beautifully flavored honey and willing to spend money advertising the fact.

Just News

Don't forget the **Tri-State (Indiana, Michigan, Ohio) Beekeepers' Conference** to be held at Angola, Indiana, August 7 and 8.

* * *

Annual Meeting — American Bee Breeders' Association and Southern States Beekeepers' Federation. You make your plans to attend—we are making our plans for this to be the best meeting held for these Associations! Meeting place and time will be: Atlanta Biltmore Hotel, Monday and Tuesday, November 2nd and 3rd, 1953, Atlanta, Georgia. We are formulating plans and will have outstanding speakers from all over the United States. Include the wife in your plans also, for we are making plans for her entertainment and pleasure. In addition to the program on the above days, we will enjoy a real Southern Barbecue. Other details of the program will be given later. Do plan to attend this meeting—you owe it to your wife—your bees—and yourself! ! ! !

* * *

The annual beekeeping program at the **University of Massachusetts** on Aug. 22 will feature Dr. Eva Crane, Director of the Bee Research Association and Editor of the Bee World. In addition there will be other prominent beekeeping specialists who have not recently appeared before a Massachusetts beekeepers' meeting.—Dr. Frank R. Shaw.

* * *

The annual summer meeting of the **Vermont Beekeepers' Association** will be held at the home of Leland Parmalee in Brandon, Vermont on Saturday August 22, 1953. The business meeting starts at 10:00 A.M. Bring your lunch for the picnic at noon. Experienced beekeepers will address us during the afternoon. Bring some of your choice honey for the exhibit, and to compete for the prizes. — Clyde N. Wood, Sec.

* * *

The **Empire State Honey Producers' Association** meeting will be held at Genesee Valley Park, Rochester, New York, on August 15th. Dr. Eva Crane of England will be with us to speak on "Beekeeping and Bee Research: the World Picture Today". A young lady will be selected to be Honey Queen to reign at the New York State Fair. A report will be given on the New York State Honey Promotional Campaign now in progress.—Mary R. Cary, Sec.

* * *

The **North Carolina** beekeepers are combining business with vacation by holding two summer meetings in the cool, beautiful mountains of Western North Carolina. They will meet at Boone, N. C., on Friday and Saturday, August 14 and 15, and will see the Historical drama "Horn in the West". Over the weekend the beekeepers will travel the Scenic Blue Ridge Parkway to Cullowhee, N. C., where they will meet again on Monday and Tuesday, August 17 and 18. Opportunity will be available for visiting the Cherokee Indian Reservation and seeing "Unto These Hills", the famous Cherokee drama. The meetings at each place will include discussions by authoritative persons, visits to local apiaries, outdoor contests, etc. Special programs including trips to nearby Arts and Handicrafts Centers are being planned for the Ladies. Dormitory rooms will be available at both meeting places for about $1.00 per person per day, and meals will be served cafeteria style at nominal cost. Bring bed linens for the Boone meeting. These will be included with room at Cullowhee. Take the entire family on an economical, but wonderful vacation. Notify the secretary by August 10 the number of rooms needed and the dates you plan to be at each meeting place.—Eugene B. Finch, Sec., 1618 Hillsboro, Raleigh, North Carolina.

* * *

The **Westchester County Beekeepers' Association** will hold its next meeting at 2:30 p.m., Sunday, August 16, at the home of Mr. and Mrs. Alfred F. Roth, 146 Oak Street, Port Chester, New York. A good speaker is expected. Come and see Mr. Roth's home

apiary. At our last meeting we were very glad to have Mr. J. H. Joyce, New York State Bee inspector from Poughkeepsie. He gave us a most enlightening talk and afterwards showed some of our newer members a lot of interesting points to look for in going through a demonstration hive. A very interesting collection of honey pots was displayed to those present by the writer. He has collected over thirty two different ones of which one is almost two hundred years old while many others are better than fifty. Again we say to all interested in bees, come and spend a pleasant afternoon. —Carlton E. Slater, Publicity.

* * *

The **Western Missouri Beekeepers' Association** will hold its annual picnic at Swope Park, Kansas City, Mo., (shelter house No. 7) on Sunday, August 9, beginning at 12:30 p.m. Fifty dollars in prizes, from eleven states will be given away. The autographed original drawing of Ed Dodd, "Creator of Mark Trail", will be auctioned to highest bidder.—Mrs. Robt. Cornforth, Secretary.

* * *

At the **Cook-Du Page Beekeepers' Association** meeting on August 16, 1953, marketing honey and honey products will be the big topic of the day by a well-known authority in this field in the person of Mr. Arthur Kehl, Sales Manager, Consumer Products Division of G. B. Lewis Company, Watertown, Wisconsin. The meeting will start at 1 P. M. sharp at the apiary of A. J. Smith, 5835 West 127th St., Worth, Illinois.—A. J. Smith, Sec.

* * *

Tazewell County Beekeepers' Association will hold a short formal meeting at Hamilton, Ill. on August 2nd. The September meeting will be held at P. F. Bourscheidt's place in Mackinaw, and in October, at the farm of J. F. Strope in Pekin. — Joseph Jachman, Secretary.

* * *

The 49th annual picnic and Field Day of the **Pennsylvania State Beekeepers' Association** will be held on August 22 at Kis-Lyn Industrial School for Boys, near Hazleton. Basket lunch at 12:00.

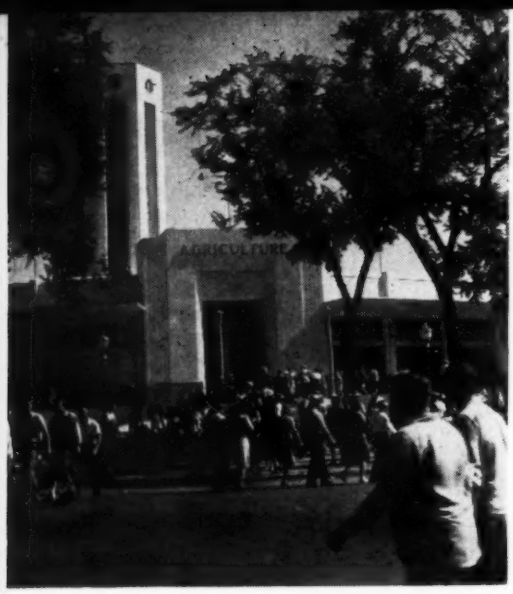
A **Beekeepers' Short Course** will be given at Clemson College on August 19 and 20. Some of the subjects to be covered include swarm control, honey exhibits, purpose of beekeeping associations, and many other topics still to be announced. There will also be a number of demonstrations near the College apiary. Students will see the latest methods of rearing queens, and also of uniting and moving bees. This will be followed by a tour of ladino and lespedeza pollination plots by the Clemson College staff. A large number of beekeeping specialists will be on hand as instructors. They will include G. H. Cale, M. J. Deyell, David Dunavan, S. E. Evans, W. C. Johnson, L. J. Jordan, Walter T. Kelley, Leslie Little, W. H. Purser, J. F. Switzer, George Vest, and D. W. Watkins.

* * *

Dr. Otto Morganthaler of Switzerland, a leading scientist in apiculture from Europe is planning to be at the Pennsylvania State College as a guest speaker during the Beekeeping Short Course, to be held during the week of August 24 to 28.

* * *

The **Middlesex County Beekeepers' Association (Mass.)** will hold its next regular meeting at the home and apiaries of member James Delorey at Groton, Mass., on August 29. There the club hive and several of Mr. Delorey's hives will be opened and inspected. Many members will recall last years' meeting at Groton and will bring their bathing suits to take advantage of the fine big fresh water lake. During July the Association had a very busy month as they visited the out apiaries of member Prof. R. B. Cheney at his summer home at York Beach, Me., where fishing, swimming, and several games were played to entertain the mixed meeting of Middlesex and State of Maine beekeepers. The evening finished off by all partaking of the wonderful New England Clam Chowder made only as Mrs. Cheney can make it. A visit was also made by many of the members to the home and apiaries of Wallace R. Parker, Secretary of the Mass. State Beekeepers' Association, of which Middlesex is a contributing member. —John H. Furber, Sec.



First National Honey Show

Sponsored by
Minnesota State Fair
St. Paul 1, Minnesota

Date: August 29 through September 1
Judges: Mykola H. Haydak, University Farm. Carl E. Killion, Paris, Ill.
Secretary: C. D. Floyd, University Farm, St. Paul 1

The beautiful Agricultural Building, Minnesota State Fair Grounds, St. Paul, home of the 1953 National Honey Show.

THE AMERICAN Beekeeping Federation and the Minnesota State Fair in a jointly sponsored Honey Show, are providing every beekeeper in the nation an opportunity to not only win valuable silver trophies and cash awards, but, also, to seize national publicity for their product, should they be declared a national champion.

The beekeeper's number one problem today, the problem which, if solved, will do more for beekeepers than anything else, is the question of "sales" and all the angles that pertain to it. We are potentially one of the strongest groups of producers there are in numbers and it is agreed, I believe, we hold the dubious honor of being the most disorganized group of salesmen there are as well.

Since promotion and salesmanship are inseparable, let's start off in 1953 with a promotional program geared to market our production.

Will you sell your crop in your town, in your county, in your state, or will you sell nationally, or are you an exporter? No matter which group you belong to, honey promotion is important to you. The National Honey Show and its program of promotion has a place for you.

Honey promotion at the county fair is suited perfectly to the hobby and part-time beekeeper. The big operator, 20 or more colonies, vies for honors at state fairs. The National Honey Show is open to all. You could be America's number one producer of quality honey. Think what a splendid start this would be for your program of sales and promotion in your area if you win at the National Honey Show.

Commercial companies pay millions for this kind of publicity—it's yours for the winning.

This is the first show of this nature ever attempted on a national scale. It is so planned to be just ahead of the 1953 major marketing season. This Honey Show is sure to attract national attention to honey at precisely the moment cool weather sets in when housewives will show a renewed interest in honey on the table.

Every beekeeper should profit by this publicity and simultaneously launch his own program of sales.

Activities and winners' names, etc., will receive national publicity all through the Show. Plan your own programs and have them ready for action at the same time.

By all means, make it your personal responsibility to see that the best sample of honey your state can produce is sent to the Show so that your state can claim the honor of producing America's finest honey.

For Rules, Regulations, and Awards please write to the Secretary, C. D. Floyd.

American Honey Institute News Notes

By Harriett M. Grace, Director
Commercial State Bank Building
Madison 3, Wisconsin

DID YOU KNOW—the average supermarket today sells over 5,000 different products? Quite a few, don't you think? And this is what honey has to compete with. For each and every one of these products is in direct competition with the other; each one beckons the consumer to "come on over and spend your dollar here."

Honey needs to meet this competition with gusto. Pursuing the old adage to "fight fire with fire", the American Honey Institute wages constant (but friendly) war with all other foodstuffs, pointing out honey's uniqueness, its sweet flavor, its nutrients, its versatility, its pureness to American shoppers. Without the American Honey Institute the honey folks and their honey would be forgotten because of the promotion of other foods. Let that day never arrive!

* * * * *

Which reminds us, 25 years of service to the beekeeper have speedily flown since the American Honey Institute first set up shop. We know, that lost in this hub of activity, the next 25 shall pass just as quickly.

Let's celebrate this 25th anniversary. We chose a Silver Anniversary Cake recipe to symbolize our service and have it printed in pamphlet form ready for your customers. Let all know that the honey packer and consumer have had a common interest in quality, well-packaged honey for the past 25 years by giving them the leaflet or by handing it to your honey jars.

Price? **125 for $1.00.** And remember, that's at printing cost to you.

And while you are writing, ask for our order blank. We have revised it to include the free new leaflets we have printed in the past year.

* * * * *

In the promotion of foods it's the new idea that wins the sweepstakes of new business. The American Honey Institute keeps a wide-awake attitude to catch any new ideas that might put honey's name in the headlines.

Newest baby at the Institute is the television release that is sent out once a month to all television stations. Set up to follow in the footsteps of its brothers and sisters in the radio and newspaper fields, these are one-page honey releases that can easily fit into a televised homemakers' program. We have had quite a few calls for just such information, and decided that if a few directors of television homemakers' programs will take the time to write to us asking for honey recipes, that many more would use them if they had them at their fingertips.

So off to television stations all over the country goes a monthly honey release.

* * * * *

Hot off the presses that do the Institute's printing jobs are three new leaflets that feature the same recipe but have a different layout. Honey Snow Cake is the favored recipe. The brown and white folder proclaims, "New, Honey Sweet, Family Treat... Delicious Honey Snow Cake". The red and white one is aimed at the coronation year: "Royalty's Favorite ....Delicious Honey Snow Cake". And the blue and white folder says, "In celebration of our 25th year.... Delicious Honey Snow Cake."

These folders are just the right size to include in the mail you send out to customers, or to put on the back of your honey containers. They are inexpensive, just **125 for $1.00.**

Federation Preparing Directory of Honey Packers and Dealers

PRESIDENT HENRY SCHAEFER of the American Beekeeping Federation, Inc., has asked all honey buyers to send their name and address to Robert Banker, Acting Secretary, Cannon Falls, Minnesota, so that he may prepare a Directory of Packers and Dealers in the next three issues of the Federation News Letter. In order to defray the expense of the Directory, a charge of $5.00 per name is being asked.

The Directory should be of value to both the producer and the packer and dealer.

Buy and Sell

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate: 15c per counted word, each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in by the 10th of the month preceding publication.

HONEY FOR SALE

WE BUY AND SELL all varieties of honey. Any quantity. Write us for best prices obtainable. The Hubbard Apiaries, Onsted, Michigan.

IOWA Honey, one can or truck loads. Russell D. Smalley, Beaver, Iowa.

CLOVER extracted honey in sixties. Abram Brubaker, Lancaster, Pa., Rt. 1.

CLOVER COMB HONEY—Ready to ship about July 15. Write for prices. C. W. Schrader, Waterville, N. Y.

FOR SALE—White Clover Honey, write for prices. Lloyd E. Allen, Tipton, Mich.

Michigan's finest raspberry, basswood, clover comb honey, in 4 x 5 window cartoned sections. Extra Fancy, $7.50; Fancy, $6.50; No. 1, $5.50; No. 2, $4.50 case. E. Z. Quick Way B Farms, Walloon Lake, Michigan.

CUBAN, CENTRAL AMERICAN AND WEST INDIES HONEY — Amber, extra light and white—60-lb. cans or in 660-lb. drums. Small lots or by the carload. Also beeswax and South American bayberry wax. Pan-American Export & Import Agency, 132 Nassau Street, New York 38, N. Y.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTICE—We can not guarantee honey buyers' financial responsibility, and advise all beekeepers to sell for cash only or on COD terms except where the buyer has thoroughly established his credit with the seller.

CASH for your comb honey and all types extracted. Send sample and best price. Buckeye Honey Co., 3930 No. High St., Columbus 14, Ohio.

CASH for Beeswax. Write as to quantity and we will quote price. Muench-Kreuzer Candle Co. Inc., Syracuse, N. Y.

HONEY WANTED—All grades and varieties. Highest cash prices paid. Mail samples. State quantity. HAMILTON & COMPANY, 2613 South Yates Ave., Los Angeles 22, California.

HONEY WANTED, any amount. If you want more for your honey, sell it to Cloverdale Honey Co., Fredonia, New York.

WRITE FOR shipping tags and quotations on rendered beeswax. We buy from one pound up and if you have over 25 pounds let us work it into foundation for you at a 25 percent saving. Walter T. Kelley Co., Clarkson, Kentucky.

WANTED—Light amber clover, amber, goldenrod, buckwheat. Advise what you have for immediate delivery. Roscoe F. Wixson, Dundee, New York.

CASH FOR YOUR HONEY—Light extracted or comb. Regular trade send sample. 60-pound cans furnished if desired. W. R. Moomaw, Stone Creek, Ohio.

CASH PAID for white and amber extracted honey. Send samples and state quantity available. Prairie View Honey Company, 12303 - 12th St., Detroit 6, Mich.

WANTED—Carloads or less of honey and wax. Any grade. Send sample and best cash price. Alexander Company, 819 Reynolds Road, Toledo, Ohio.

ALL GRADES HONEY AND WAX WANTED—Mail samples, advise quantity and cash prices delivered to us. HONEY SALES COMPANY, 1808 NO. WASHINGTON AVE., MINNEAPOLIS 11, MINN.

Wanted — Honey all grades. Quote prices and send sample. Write Stoller Honey Farms, Latty, Ohio.

WANTED — White extracted or comb honey. Send sample. Millersport Honey Co., Millersport, Ohio.

BEESWAX OR HONEY WANTED in trade for supplies or cash. Hodgson Bee Supplies, Ltd. 575 - 13th Ave., New Westminster, B. C., Canada.

HONEY WANTED, all grades, in 60's. Mail samples advise quantity, best price. A. I. Root Co. of Syracuse, 1112-14 E. Erie Blvd., Syracuse, N. Y.

COMB AND EXTRACTED—Truck lot—white—needed immediately. Cash paid on receipt. LOSE BROTHERS, 204 East Jefferson St. Louisville 2, Ky.

WE NEED finest quality clover comb honey in 4¼ sections. Advise quantity and price asked. R. W. Barnes & Sons, Oakland, Nebr.

WANTED—Basswood honey, new crop. Odell F. Burch, 610 N. Main St., Chincoteague, Va.

FOR SALE

WRITE FOR CATALOG — Quality Bee Supplies at factory prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Beekeepers' Supplies and Comb Foundation. Onsted, Michigan.

THE BIGGEST BEE SUPPLY Catalog published (64 pages) free for the asking. Listing many items not found in other Catalogs. No agents—buy direct and save 20%. WALTER T. KELLEY CO., CLARKSON, KENTUCKY.

FOR SALE — New heart cypress 10-frame bottom boards. K. D., 10 or more $1.00 each; 50 or more, 90 cents each; 100 or more, 85 cents each. One nailed up sample, postpaid, $1.25. Fred L. Poole, Elizabethtown, Rt. 2 Box 67, No. Car.

BEE SUPPLIES—Tin packages; 10 sizes glass jars; paper shipping supplies; window cartons and other items. Roscoe F. Wixson, Dundee N. Y.

The only comb foundation plant in tthe east. We sell foundation, work your wax, render combs and cappings. Robinson's Wax Works, R D. 3, Auburn, N. Y.

SIMPLEX TRAP clips queens without handling, $1.00 postpaid. Instant Frame Spacers — eight-nine, specify size, $1.50 postpaid. Free circulars. George Leys, 36 Jackson St., New Rochelle, N. Y.

12-frame extractor motor, honey tanks, etc. Walter Hallbauer, Java Village, N. Y.

ELECTRO Filling Machines, users and distributors. Write Stoller Honey Farms, Latty, Ohio.

100 good used 55-gal. honey drums. Open head and bung type. The Hubbard Apiares, Manufacturers Beekeepers Supplies & Comb Foundation, Onsted, Mich.

FOR SALE: 500 colonies of bees, equipment to run up to 1,000 colonies, honey house, and all equipment, located in Central Florida. $4,500 cash. Box 85, Gleanings, Medina, Ohio.

FOR SALE: 800 colonies of bees and equipment, large new extracting house, stainless steel extracting equipment. Located in good irrigated valley in western Montana. Write for further particulars. W. R. Hettrick, 153 Daly Ave., Hamilton, Montana.

FOR SALE—21 colonies, 147 supers, 29 empty hives, 50 queen excluders, 100 new shallow extracting frames, some foundation. Everett Beckett, Brooksville, Rt. 2, Kentucky.

BEES AND QUEENS FOR SALE

We use all possible care in accepting advertisements but we cannot be held responsible in case disease occurs among bees sold or if dissatisfaction occurs. We suggest that prospective buyers ask for certificate of inspection as a matter of precaution.

GOLDEN SELECT UNTESTED QUEENS, 1 to 25, $1.00 each; 25 up, 90c. Carolina Bee Farm, Graham, N. C.

CAUCASIAN QUEENS EXTRA GENTLE. Select queens. 1 to 25, $1.00 each; 25 up, 90c. Black River Apiaries, Currie, North Carolina.

THREE BANDED ITALIAN queens. Select. 1 to 25, $1.00 each; 25 up, 90c each. Alamance Bee Company, Rt. 1, Graham, North Carolina.

CAUCASIAN Bees and Queens, 2-lb. pkg., $2.75; 3-lb. pkg., $3.50. Queens 75c each; 100 $65.00. Lewis & Tillery Bee Co., Greenville, Ala.

YELLOW ITALIAN bees and queens. Real producers. Health certificate, satisfaction guaranteed. 3-lbs. with queen, $4.50; queens airmail postpaid, $1.00; 20 to 50, 90c; 50 to 100, 85c. O. E. Brown, Rt. 1, Asheboro, North Carolina.

NORTHLAND ITALIAN QUEENS—For production. $1.00 each; 10 up, 90c. Shirl Baker, Rodney, Michigan.

HONEYLINE QUEENS—Large beautiful Italians, $2.00 each. STEPHENS APIARIES, Wingate, Indiana.

CAUCASIAN queens, young large laying, personally raised. Balance of season, $1.00 each. Bred Brock, McDonald, Tenn.

HONEY LABELS

Improved designs, embodying color, balance, simplicity, and distinction. Please send for free samples & prices.

C. W. AEPPLER COMPANY

Oconomowoc, Wisconsin

QUEENS

Italians or Caucasians

This is your chance to get some of the best queens on the market at such a low price. Young mated and live arrival guaranteed. Clipped, marked and air mailed at your request.

Prices:

1-25 lots 75c
25-50 lots 65c
100 up 60c

FARRIS HOMAN

Shannon, Miss.

Personally Reared

Caucasian Queens

$1.00 each

Large lots 90c each

Howard Weaver

Navasota, Texas

Package Bees & Queens

Quality & Service

C. F. KOEHNEN & SONS

Glenn, California

HONEY WANTED

Carloads and less than carloads. Mail sample and best prices in all grades.

C. W. AEPPLER COMPANY

Oconomowoc, Wisconsin

ATOMIC POWER?
FLYING SAUCERS?
NO! !
HYBRID QUEENS

Under contract we have taken over the equipment and breeding of Kelley's Island 4-way Hybrid queens. No other breeder can offer you these bees. They are known as "Island Hybrids".

Look over your queen needs and place your order for replacements early for immediate or future delivery.

Many favorable reports have been received on this bee.

Prices June 1st to Oct. 15th

	Hybrid Stock	Rossman Stock
1-25	$1.25 ea.	$1.00 ea.
26 or more	1.15 ea.	.90 ea.

"They Produce"

Rossman Apiaries

P. O. Box 133 Moultrie, Ga.

CAUCASIANS
CARNIOLANS

Hardy, prolific, rapid build-up, best of workers. Caucasians have the longest tongue of any race. Both races build beautiful white combs. BOTH ARE THE GENTLEST OF ALL RACES OF BEES. Gentleness is safest in towns, near neighbors, or near streets or highways. Gentleness saves time, sweat, patience, and work. Discount on quantity orders. Ask. Begin preparing for 1954 season this month. August is a good month to requeen. A few Caucasian Breeding Queens for Sale.

Prices, Both Races:

Untested Queens	$1.00 each
Tested Queens	1.75 each

By Air Mail

Albert G. Hann

Glen Gardner, New Jersey

ITALIAN
Package Bees and Queens

Jackson Apiaries

Box 58 Funston, Ga.

Prepare for the Future
Buy U. S. Savings Bonds

YANCEY HUSTLERS—Three-band Italians. They get the honey. Queens balance of season, $1.00; $10.00 dozen. Caney Valley Apiaries, 2500 Nichols, Bay City, Texas.

TWENTY YEARS OF SELECTION, Jersey bred queens for larger crops. Queens, $1.00 each. Milton Stricker, R. D., Annandale, New Jersey.

SEEDS

HONEY PLANTS: Seeds—Trees—Plants. Illustrated catalog on request. Pellett Gardens, Atlantic, Iowa.

MISCELLANEOUS

SECTION COMB HONEY production procedure steps, 50c. Glossary of Beekeeping Terms, 50c. United Industries, Dept. L, Box 449, Madison 1, Wisc.

Bargain in new or used honey Cans or Root supplies for cash or honey. Buckeye Honey Company, 3930 N. High St., Columbus 14, Ohio.

WANTED

WANTED—Several new or used electric planes for uncapping. L. E. Hicks, 3930 N. High St., Columbus 14, Ohio.

Wish to purchase honey producing outfit. Prefer mid-west. Equipment without bees considered. Box 853, Gleanings, Medina, Ohio.

WANTED — Three-frame non-reversing extractor, in good condition. A. Wessner, 104 Burnside Drive, Hastings-on-Hudson, New York.

HELP WANTED

WANTED — Young men interested in learning bee supply business. Openings in shipping, sheet metal, and printing departments. The A. I. Root Co., Medina, O.

MAGAZINES

THE BEE WORLD international and scientific journal on bees and beekeeping, with apiculture abstracts. Monthly, including membership in tthe Bee Research Association, $3.00 per annum, including apicultural abstracts. Dr. Eva Crane, Director, 55 Newland Park, Hull, Yorks, Eng.

Know interesting facts concerning the bees of India through the INDIAN BEE JOURNAL, published in English by the Bhupen Apiaries (Himalayas), Ramgarrh Dist. Naini Tal, U. P., India, or available through them. Subs. Rs7/ or 10 shillings or 2.25 dollars per annum. Single copy Rs 1/8. 1/9 or 40 cents (International Money Order). Payment in mint postage stamp of your country accepted.

Read the South African Bee Journal. Published every two months. Subscription 7/6 per year to the Treasurer, P. O. Box 3306, Cape Town, South Africa.

INTERESTED in Angora Goats? Read the Sheep and Goat Raiser, Hotel Cactus, San Angelo, Texas the only ranch magazine published serving the Angora Goat industry. Subscription $1.00. Sample copy fifteen cents.

Summer Prices
on
Package Bees and Queens

2-lb. pkgs. with queens, wt. 7 lbs., $2.00 any number
3-lb. pkgs. with queens, wt. 9 lbs., 2.50 any number
Untested queens, ...50 any number
Tested queens, ... 1.00 any number

We list weight of packages so you can check mail charges.
Three packages to crate in U. S. A. Express best for Canada.
Queens clipped on request and Airmailed.

Our 41st year — that is why we know **Quality** counts.

Merrill Bee Company

Box 115 State Line Mississippi

HONEY WANTED
Cut Comb and Extracted
Advise what you have
T. W. BURLESON & SON
WAXAHACHIE, TEXAS

GIRARDEAU APIARIES
Tifton, Ga.
Shippers of
Italian Package Bees
and Queens

THE AUSTRALASIAN BEEKEEPER
The senior beekeeping journal of the Southern Hemisphere provides a complete cover of all beekeeping topics in one of the world's largest honey producing countries. Published monthly by Pender Bros. Pty. Ltd., Box 20, P. O., Maitland, 3N, N. S. W., Australia. Subscription by Bank Draft or International M. O. 18/- (approx. $2.15) per year, post free. Sample copy free on request.

ITALIAN QUEENS
$1.00 each
Pure mating guaranteed
W. E. PLANT
Hattiesburg, Mississippi

If you are taking time to read, why not read the best? Condensed to save you time. Illustrated to give you pleasure.

Modern Beekeeping
The Picture Bee Magazine
Box 210 Clarkson, Kentucky

ITALIAN
Queens Queens
Nice large queens, 55c
MITCHELL'S APIARIES
Bunkie, La.

Peace is for the strong . . .
Buy U. S. Defense Bonds regularly!

GOOD QUEENS? We have them. Three-Banded Italians only. Tops in production and gentleness. The choice of leading beekeepers for more than 30 years. Requeen now for good wintering and maximum production next year.
$1.00 each 10, $9.00 25, $20.00 100, $80.00
Prompt shipment. Postpaid. No disease.
H. C. SHORT, Fitzpatrick, Ala.

J E N S E N Says:
Judicious use of top quality queens is a most important adherent to successful beekeeping. On the quality of your queens depends not only your honey crop, but also the life and worth of your colonies. Poorly laying queens, whatever the cause, are costly liabilities. Time is money these days, and you cannot afford to take chances on supersedures, or sudden disappearance of old worn-out queens. Keep a few spares on hand for emergencies, either in nuclei, or a queen reservoir. It is good insurance; saves time, too.

"MAGNOLIA STATE"
Italian Queens
Time Tested
You'll like 'em

DADANT'S
Improved Stock
"Starline" Hybrid Queens
Jensen Reared

— PRICES —

1-24	$1.25	1-24	$1.50
25-99	1.15	25-99	1.40
100-up	1.00	100-up	1.25

Clipped and Marked Free on request only

Clipped and Marked Free as a regular SERVICE

Reg. U. S. Pat. Off.

JENSEN'S APIARIES MACON, MISSISSIPPI U. S. A
Where QUALITY and SERVICE are Synonymous

HONEY WINE AND VINEGAR

(Continued from page 491)

1935. The use of honey in making fermented drinks. Fruit Prod. Jour. 14:363-6

Filipello, F., Marsh, G. L. and Cruess, W. V.
1935. Suggested directions for making honey mead. Am. Bee Jour. 75:437-438.

Filipello F. and Marsh, G. L.
1934. Experiments with mead. Am. Bee Jour. 74:537-538.

Francot, P.
1944. The production of honey (fermented) beverages, Progress Agr. Rit. 114:368-72 (1940) Chem. Zentr. II:485-8.

Gayre, G. R.
1948. Wassail! In Mazers of mead.

Gereret, Guadalberto and de Castro, Julio.
1943. Honey beer, Rev. Assoc. Ing. Agron. 15:67-70.

Institut "La Claire"
1947-52. Advertizing brief. Resume de la preporation dun hectolitre d'Hydromel

Kelty R. H.
1920. Profit in honey vinegar. Glean. Bee Cul. 48:659.

Macdonell, A. (Editor)
1910. The Closet of Sir Kenelm Digby Knight opened. Originally pub. 1669.

Sarin, E.
1921. Honey wines (translated title). Ripr. Z. Nahr-Gennusm. XLII, 90-98.

Vouloir, George. 1953. Nectar.

(to be continued)

HOW WE INCREASED OUR HONEY SALES

(Continued from page 457)

eaten it before. Since we started to encourage restaurants to serve honey, sales at the stores have increased approximately 50 percent. And it all started when the restaurants substituted honey for jelly and marmalades.

Maddox Ranch House Cafe, at South Brigham City, Utah, uses two 60-pound cans of honey during the summer months. They have approximately 40 tables and each table has a honey server so that their customers can eat honey with hot rolls or corn bread. When the waitress asks customers if they would like some desert, the most frequent reply is "No thanks, just give me an extra roll and some of that delicious honey."

HONEY PROCESSING

(Continued on page 473)

by the use of suitable heating equipment.

As for comb honey, we hear and read a great deal about its production and featuring. There is no doubt about the appeal that honey in this form has for a large proportion of the honey consumers. It would appear that from the standpoint of business getting and sales promotion, we should give people what they want most, make sure it is of the highest quality and dress it up in neat attractive containers. Well processed extracted honey put up in attractive glass jars with an equal amount of neatly cut cubes of fancy comb should give the personality and distinctiveness to honey which it rightfully deserves. As soon as we reach the point where the honey we sell speaks for itself, it will be more effective than flashy advertising.

Of course we should advertise. All worthy products deserve a certain amount of publicity. With all the competition of syrups and jellies on the grocers' shelves, there is good reason to stress all the good points of our product. As we progress in "Honey Technology" our industry will advance just as the dairy industry has advanced through "Dairy Technology".

Acknowledgements: Much of the material in this article has been gleaned from many sources so that full credit to all is rather difficult. A large portion has come from various articles in current beekeeping publications, especially "Gleanings", "The American Bee Journal", Grout's "The Hive and the Honey Bee" and Root's "ABC and XYZ of Bee Culture". Valuable hints and suggestions have been received from Dr. W. E. Dunham of the Ohio Experiment Station, Dr. V. G. Milum of the University of Illinois, Prof. E. C. Martin of Michigan State College, G. H. Cale of the American Bee Journal and C. A. Reese of the Ohio State University.

Canada's National Monthly Magazine for Beekeepers

Canadian Bee Journal

Streetsville, Ontario, Canada

U. S. Subscription Price, only $1.75 per year.

IT PAYS TO REQUEEN

WITH HOLLOPETER'S Italian Queens, reared in the mountains of the North from stock full of vim, vigor, and vitality. Quality and service — the best during fall honey flow.

— Prices —

1-9	$1.00	each
10-24	.90	"
25-49	.80	"
50-99	.75	"
100-up	.70	"

White Pine Bee Farms
Rockton, Pa.

SELECTED ITALIAN QUEENS
any number 75c

CAUCASIANS
90c

All queens shipped Air Mail and guaranteed to please. From June 1st to Nov. 1st.

Walter D. Leverette Apiaries

P.O. Box 364 Fort Pierce, Fla.

THEY DIDN'T KILL HER

(Continued from page 492)

Thoroughly curious now as to the outcome, I waited until Sunday morning to check the hive. When I looked I found they had the queen released and acted as if they had been given a new queen. There were quite a few eggs in the cells and on repeated checkings she was still laying. Now, why did they ball her and why didn't they kill her? They certainly had plenty of chance to. Perhaps if we could talk their language we would know.

Our Cover Picture

This month's cover picture was taken by George P. Georghiou in his home apiary in Cyprus. George's cat is enjoying a sunbath on top of the hive. Once in a while the bees bother her, George says, but she soon forgets about it and returns.

Reg. U. S. Pat. Off.

YORK'S QUALITY BRED QUEENS
TWO STRAINS
Queens Bred Up to a Quality, Not Down to a Price

YORK'S ITALIANS		DADANT STARLINES	
1-24	$1.00	1-24	$1.35
24-99	.90	24-99	1.25
100-up	.80	100-up	1.15

The Preference of Leading Honey Producers
YORK BEE COMPANY JESUP, GEORGIA U. S. A.
(The Universal Apiaries)

ITALIAN QUEENS **PACKAGE BEES**
Packages With Young Laying Queen
At the Following Prices:

	1-9	10-99	100-up
2 lb.	$3.25	$3.00	$2.75
3 lb.	4.25	4.00	3.75
4 lb.	5.25	5.00	4.75

After July 1, Queens $1.00 each—Starline Hybrids $1.25
We guarantee safe arrival, a health certificate with each shipment, and prompt service.
Our Queens are reared under my own personal supervision, our aim is QUALITY NOT QUANTITY.
LITTLE'S APIARIES P. O. Box 122 Shelbyville, Tennessee

Reg. U.S. Pat. Off.

Package Bees for 1953

Truck loads a specialty
Nuclei made to order
Italian Queens

Eugene Walker

Live Oak, Calif.

Booking orders now. Over 30 years a shipper. Send for Free Circulars.

BLUE BONNET APIARIES
Weslaco, Texas

"GULF BREEZE"
Italian Queens
PRICES:
1-24 ..... 80c ea.
25 and up 75c ea. Airmailed
BESSONET BEE CO.
Donaldsonville, La.

CAUCASIANS
The World's Gentlest Honeybees
Breeding them since 1940
Queens only, $1.00 each, any number
EPPLING'S APIARIES "IDLEWILDE"
Covington, Virginia

LIVE AND LEARN

(Continued from page 475)

about ready to hang out the flag, when boom went the whole shebang. The bees were pretty well crowded in that colony, because I had been grooming it ever since last August. I was watching closely, but didn't see any queen-cells. I did notice that the bees were crowding the top body full of honey, and the lower body was getting pretty full, too. Then on one examination there were no eggs. Also, no supersedure or swarm cells. I gave them a frame of eggs and they built eight queen cells. The best one was saved and the rest killed. And then they swarmed, leaving the hive queenless, and hopeless. Way up in the top of a locust tree that I couldn't even reach with a rock.

I introduced a queen, she was accepted, and the hive took up where they left off. But the season is awasting and I don't know how much comb honey I am going to get, regardless of the grading. But, like the famous slogan of a famous baseball team—wait until next year.

HARPER'S FAMOUS QUEENS
by airmail
75c each
10 or more, 65c each
CARLUS T. HARPER
New Brockton, Ala.

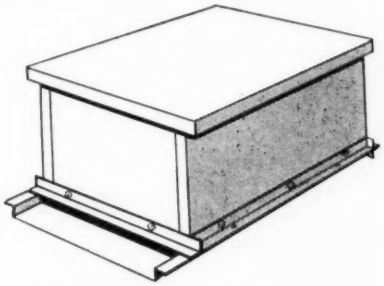
The most revolutionary improvment in the hive since Langstroth—

The "UNI-TEMP" ALUMINUM HIVE

- Cooler in summer
- Warmer in winter
- Exceptionally long life
- Light weight
- Rust free, rot free
- Never needs painting
- Accurately bee-spaced

(Patent application in preparation.)

Ask for our Free Catalog



The A. H. HALE CO. Hapeville, Georgia

BETTER BRED QUEENS **THREE-BANDED ITALIANS**

65c ea. Air mail

Don't let that poor queen rob you. Replace her with our Better Bred Stock. It will pay you to requeen.

65c ea. Air mail

CALVERT APIARIES Calvert, Alabama

FOR TOP QUALITY AND SERVICE—SEND US YOUR ORDERS

We offer Two Quality Strains:
DADANT'S STARLINE HYBRID QUEENS
GARON'S THREE-BANDED ITALIAN QUEENS

PRICES:

Italians	1-24	$ .80	Starlines	1-24	$1.20
	25-99	.75		25-99	1.15
Reg. U. S. Pat. Off.	100-up	.70		100-up	1.00

Queens Air Mailed, Clipped and Painted, if desired at no extra charges.

GARON BEE COMPANY DONALDSONVILLE, LA.

QUEENS QUEENS QUEENS

"ITALIANS"

We offer you young laying queens, shipped prepaid, airmail. Mark colonies with old and failing queens and replace when conditions are favorable. Queens available until November 1st. Clipped and painted at no extra cost.

1-9	.75 ea.
10-up	.70 ea.
Tested Queens	$1.50 ea.

Quality Does Not Cost — It Pays

THE WILBANKS APIARIES CLAXTON, GEORGIA

QUEENS **By Return Mail** **60c**

2-lb. package with queen	$2.50
3-lb. package with queen	3.00
Tested Queens	1.00

—BRIGHT 3-BANDED ITALIAN—

NOW READY. The past 32 years the foundation of our business has been to furnish you the best bright 3-banded Italians that money could buy. Prompt service, full weight, safe arrival, health certificate, and satisfaction.

Package bees are shipped express F.O.B. If wanted shipped parcel post, the postage will be sent C.O.D.

NORMAN BROS. APIARIES
Ramer, Ala.

YOUR BEST INSURANCE

FOR A BETTER HONEY CROP in 1954 is to requeen now with Ladylike Caucasian queens. They get results for others; they will make a better crop for you if properly handled.

Prompt shipment. Circular free.

LADYLIKE CAUCASIAN QUEENS

1-11	$1.10 each
12-24	1.00 each
25-50	.90 each
50 or more	.75 each

CAUCASIAN APIARIES
Castleberry, Ala.

Look for this Sign
When you Want
QUALITY AT LOW COST

Trade Mk. Reg.
U. S. Pat. Off.

KELLEY — "The Bee Man"

QUEENS

KELLEY ISLAND queens by the thousand are available now. If you are in a rush count on us for quick shipment by return air mail.

1-24 ..... 75c by prepaid air mail

25-up ..... 65c by prepaid air mail

THE WALTER T. KELLEY CO., Clarkson, Ky.

Peace is for the strong . . .
Buy U. S. Defense Bonds regularly!

Index to Display Advertisers

Aeppler Co., C. W. 505
American Bee Journal 451
Australasian Beekeeper 507
Australian Bee Journal 454
Bemis Bros. Bag Co. 455
Bessonet Bee Co. 510
Blue Bonnet Apiaries 510
British Bee Journal 452
Bryant & Sawyer 452
Burleson & Son, T. W. 507
Calvert Apiaries 511
Canadian Bee Journal 509
Caucasian Apiaries 511
Chrysler & Son, W. A. 450
Continental Can Co. 456
Dadant & Sons, ... Inside front cover
Eppling's Apiaries 510
Garon Bee Co. 511
Girardeau Apiaries 507
Hale Co., The A. H. 511
Hann, Albert G. 506
Harper, Carlus T. 510
Hazel-Atlas Glass Co. Inside back cover
Homan, Farris 505
Hubbard Apiaries 454
Hutchison Mfg. Co. 451
Jackson Apiaries 506
Jensen's Apiaries 508
Jepson Co., H. H. 454
Kelley Co., The Walter T. 512
Koehnen & Sons, C. F. 505
Leverette Apiaries, Walter D. 509
Lincoln Surplus Sales 454
Little's Apiaries 510
Lotz Co., August 452
McCord Mfg. Co. 450
Marshfield Mfg. Co. 453
Merrill Bee Co. 507
Miller & Co., Woodrow 450
Mitchell's Apiaries 507
Modern Beekeeping 507
Muth Co., The Fred W. 454
New Zealand Beekeeper 451
Norman Bros. Apiaries 511
Plant, W. E. 507
Prairie View Honey Co. 451
Root Co., The A. I. Back cover 455
Root Co. of Indianapolis, A. I. 450
Root Co. of Syracuse, A. I. 450
Rossman Apiaries 506
Rusch Co., A. H. 452
Short, H. C. 508
Stoller Honey Farms 451
Walker, Eugene 510
Weaver, Howard 505
White Pine Bee Farms 509
Wickwire Brothers, Inc. 450
Wilbanks Apiaries 511
Williams Bros. Mfg. Co. 454
Winegar, Leon A. 451
Wirth, E. D. 454
Woodman Co., A. G. 452
Yates, A. W. 451
York Bee Co. 510